HARDWARE
&
ACCESSORIES

Vintage Radio Identification SKETCH-BOOKS of D. H. MOORE

VOLUME V

The Editorial Group, Ltd...

P.O. BOX 521 • PALO ALTO, CALIFORNIA

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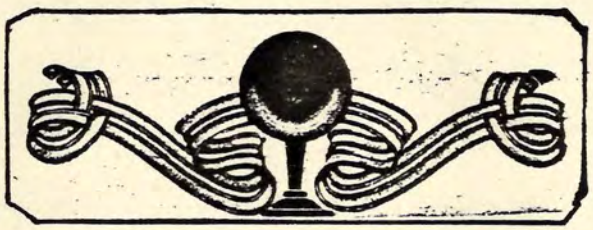
Bits and pieces of these volumes have been published, referenced, reviewed in several media devoted to the hobby of vintage Radio, including a few foreign countries, such as New Zealand, Japan, Canada and England. Such favourable notice for such a labour of love is hereby acknowledged in appreciation.

Thanks must also be offered Stan Lopes who tediously editted the technical authenticity of circuitry to be found in Volumes II through VII. His labours have resulted in an obvious authenticity, we feel, especially for those who delight in tracing out vintage schematics. He even found technical errors in original sources!

Special thanks are due Douglas G. Yule, who originally sponsored this effort as a contribution to the hobby, without whose prompting these Sketch-Books may not have come into existence. Also, thanks are given to Howard W. Granoff, of the OLDE TYME RADIO COMPANY, whose unflagging enthusiasm and publicity has done much to make these Sketch-Books known within the fraternity.

And in as much as fraternalism is the basis for shared enthusiasm, which is what any hobby is, and because of the original and dramatic shift away from the current vintage Radio fare, it follows that the publishers and the author, being human, would appreciate hearing from you, your comments, along with any suggestions you'd care to offer with an eye to producing bigger and better vintage Radio literature in future.



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INTRODUCTION

When one considerd the thousands of sales catalogues printed and distributed during the Twenties - in excess of 19,000 per year - one might conclude that at least a thousand or two would be easily come by today. More: that devoting a seperate volume to hardware and accessories, which were the bulk of catalogue offerings, would be like gilding the lily. It doesn't work out that way, for two reasons:

1. Because of the cheap newsprint on which most of the aggressive sales catalogues were printed, not too many have survived intact, or remained usefully intact; and those which have are usually of little if any historical significance;

2. Some items were produced and exploited for a year or so, depending upon the degree of media promotion, to enjoy a brief popularity, were utilised by a few manufacturers, then abruptly discontinued; and references to them never appeared again.

In consequence, I ended-up conducting my own rather extensive research amid hundreds of early Radio media, both domestic, foreign and private, tabulating facts and figures and configurations, to eventually compile the volume you now have before you.

There was also another reason for my digging so deeply into early media, to satisfy myself about such things as why fixed resistors and variable condensers, for example, were offered in the same mode, as they all were designed to perform identical functions. Why such a variety when one would work as well as another?

A resistor is a resistor is a resistor...but its *physical configuration* became its selling point. The same held true for variable condensers, grid-leaks, neutralising condensers, RFCs, AF transformers.

With shops such as Woolworth, Kressge, Sear-Roebuck, Montgomery-Ward, Western Auto selling all manner of radio parts by the carloads, it follows that a lot of the hardware and accessories available was simply oportunistic junk, but some of which could have an historical or social implication. The quality products survived and all the inferior hardware and accessories died a deserved death. My own experience with many of the items depicted herein-after has allowed me to the following conclusions, among others:

For example: we usually think of PILOT as having produced a line of finely made products, aside from actual radio sets. Yet examining their earlier production, one finds them rather crudely finished or carelessly made. This is particularly noticeable in their early sockets and variable condensers. Their quality did not improve until Pilot Electric became Pilot Radio, under Goldberg in 1926.

Lynch, Elkay, Jones, among others, produced what were called filament ballast resistors, but they were all inferior to the first one, designed by Radiall and called "AMPERITES". The use of pot-metal, also known as mush-metal, was used by many variable condenser manufacturers, and as well all known, such use led eventually to cracking, pitting, and freezing of turning surfaces. Whatever competent engineering went into the design of the device was cancelled out, in time. Cardwell and Amsco apparently recognised this problem early on, as they designed variables without any pot-metal being used at all. Probably the worse use of pot-metal was by GREBE, in their articulating mechanism used to operate three or more variable condensers from a single control. Their use of soft rivets didn't help, either.

Among fixed resistors, I have found that FROST's wire-wound vertically mounted types, DAVEN's "Glastor", and ELECTRAD's "Metallic", to be superior to others, in terms of dependability and longevity. Modern resistors are all pretty much the same because of standardisation.

In the early days one had a choice of resistors made from a variety of materials, such as carbon, ceramic, metal, mica, and all had a very wide tolerance which could be as much as 40% in some cases. Center-tapt resistors by DeJUR, and that made by CARTER with its sliding handle, were excellent, dependable contributions. Among RFCs, units encased by SAMSON, DeJUR, and HAMMARLUND proved most effective as well as being the most aesthetically satisfying.

In transformer configurations, the open-frame type was used for years. It was also the cheapest to produce. Encased transformers in the early days did exist but few were produced until the mid-Twenties. Then there was a rash of encased units by such as REMLER, ACME, SAMSON, KARAS, PEERLESS, ERLA, THORDARSON, RAULAND, SANGAMO, GENERAL RADIO, etc. The ERLA "Concert Grand" of 1926 was quite a unique design, but proved too expensive to keep in production.

The first canned coil was manufactured by the CRIBBEN RADIO CO. of Chicago in 1925, under the label "Harper Metaloid". It consisted of a vertically mounted rectangular metal block on a hard rubber square on which were also mounted the binding posts. This, too, has been shown in the following pages.

The evolution of tube sockets was a wonderland of ignorance and cleverness, genius and imagination. Every known mallable material

was used, at one time or another, including hard rubber, ceramic, steel, glass, Bakelite, Formica, composition material. Some, like the AMPHENOL 146-124, were elabourate over-sophistications; others, like the REMLER Type 50, were simplistic in the extreme.

Security of the tube's prongs was the great bug-bear of all early sockets. The contacts simply could not retain their tension, nor their rigidity for too long. Here, too, various metals were prest into service, including steel, aluminum, copper, brass, and later as the art of metallurgy advanced, spring-steel. One of the more clever designs is to be found in the SILVER-MARSHALL sockets that was ringed with button-contacts, which matched button-contacts on the bottom of S-M coils. But again the softness of the metal used failed them.

Antennae gimmicks, which must also be considered as accessories, proliferated during the Twenties. It is interesting to note that the only two cases in which the Government charged mail-fraud against a radio parts manufacturer was against a firm in Chicago that offered the "Earth Antenna" and the "Underground Aerial". Both were worthless. Two of the better gimmicks were made by BREMER-TULLY and RAULAND - labelled "Station Isolator" and "Filtrola", respectively. My own experience with the G.E. "All-Wave Antenna", that fits in the palm of your hand, was as clever as any, plus the fact that it works. Its principle was the same as the STEINITE Wave-Trap of 1926.

The evolution of battery eliminators has long fascinated me and in tracing out their history, I was astonished by the actual number that were available during the late Twenties, after the so-called all-electric set became the vogue. I was also surprised to find how few are remembered today. Schematics for many of the early eliminators will be found in Volume IV; here, I have depicted a myriad of physical configurations of eliminators.

Dials, dial mechanisms, knobs and escutcheons all had their hour in the sun, and many were truly ingenious. all reflective of that spirit and attitude that was the hall-mark of early Radio, in the early days - the like of which cannot be found amid the uninspired configurations we have about us today. The early hard rubber dials and knobs, in the mistaken belief taht hard rubber had the lowest dialectric, actualy lasted until the mid-Twenties.

Crowe was probably the largest supplier of metal dials and escutcheons, producing some very elegant designs, but Bakelite dominated the production of dials, panels, sockets for a long time. Unhappily, the LIGNOLE process did not lend itself to the production of dials, but had it, I rather imagine the results would have been as striking as the lovely Lignole panels. Among the more visually attractive dials were an assortment by LACAULT, PACENT, EBY, CORNELL, REMLER, KURZ-KASCH.

As with any aggressively pursued sociological phenomenon, such as the advent of Radio, ancillary contributors mushroomed all in the space of a few years after the Kaiser's War, offering all manner of gimmicks, gadgets, devices - all claiming to enhance this new toy of everyman called Radio. A good 50% of all such offerings were quite worthless, but such con-games will always be with us. It is interesting to note that most of the reputable manufacturers of hardware, and accessories, such as Carter, Frost, Lacault, Jones, *et al.*, were all involved with Radio during the Kaiser's War.

In the following pages you will find a more or less comprehensive survey of hardware and accessories available to the enthusiast during the Twenties, reflecting both obvious and dubious applications. All, however, in one way or another, aided and elevated the awareness of everyman to Radio.

The current mystique anent "electronics" could not have come about without the advent of Radio, and the rise of Radio remains the distinctive sociological phenomenon of this century.

* * *
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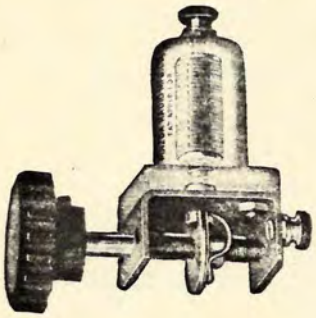
THE ORIGIN OF THE SINGLE CONTROL

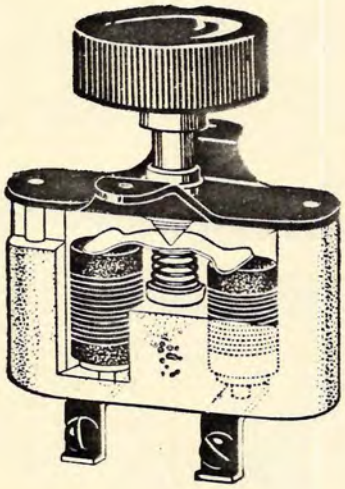
The sheiks are responsible for the original demand for single control sets. They could not understand why a man who needed only one arm to drive a car needed two to tune a set.

A CARBON-PILE RESISTANCE NOTATION



MAZDA

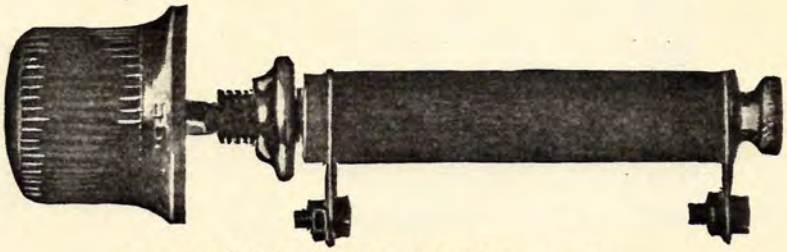
The principle behind the carbon-pile resistances was sound, and enjoyed a broad popularity during the early Twenties, until it was discovered that wire-wound types were cheaper to produce in the mass. Cuts shown on this page represent the better ones available to the home-builder in 1922. The porcelain encased Bradleystat was the most durable, and lasted longer than any other, as all others died aborning, save for the English-designed Bretwood.



The principle was simple - resistance varied in direct proportion to the amount of exerted pressure on the graphite discs smoothly, silently. But in time, say, in five or six years the graphite discs would tend to disintegrate and one would get erratic readings on meters. The Allen-Bradley people went on to produce a Bradleyohm potentiometer and a Bradleyleak in the same porcelain-encased configuration, but neither were as popular as the Bradleystat.

The Bradleystat rated at 10 amperes was widely used in the construction of early battery-eliminators, until the Power Clarostat proved to be better. The units depicted here had an average price of $1.75, when the dollar was a gold-based currency.

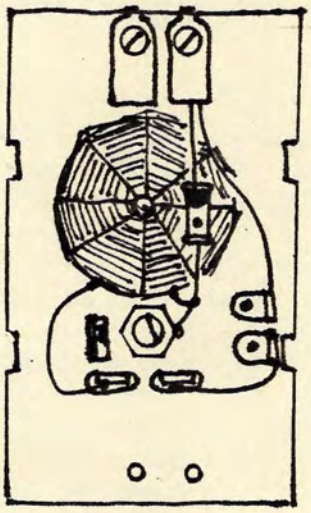
ACME



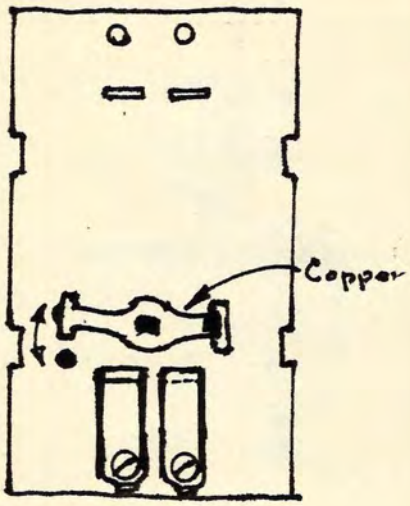
Bretwood, Ltd., London, Eng., Sole Patentees and Owners

ANTENNAE DEVICES

(KNOB DELETED)



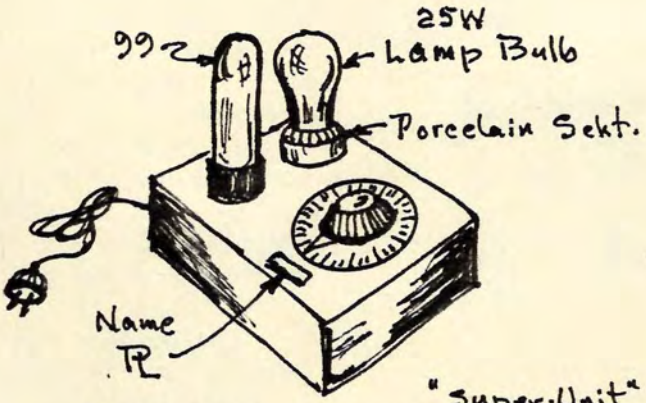
(COVER REMOVED)



BOTTOM VIEW

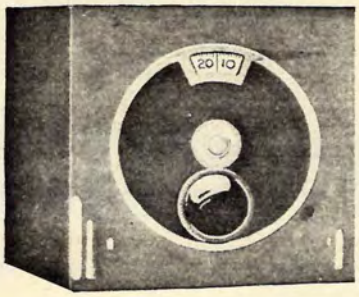
GENERAL ELECTRIC

"COIL-TENNA"
(1922-$4)

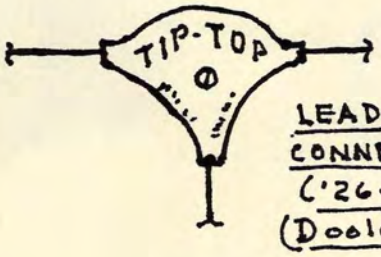


RESONANCE INDICATOR

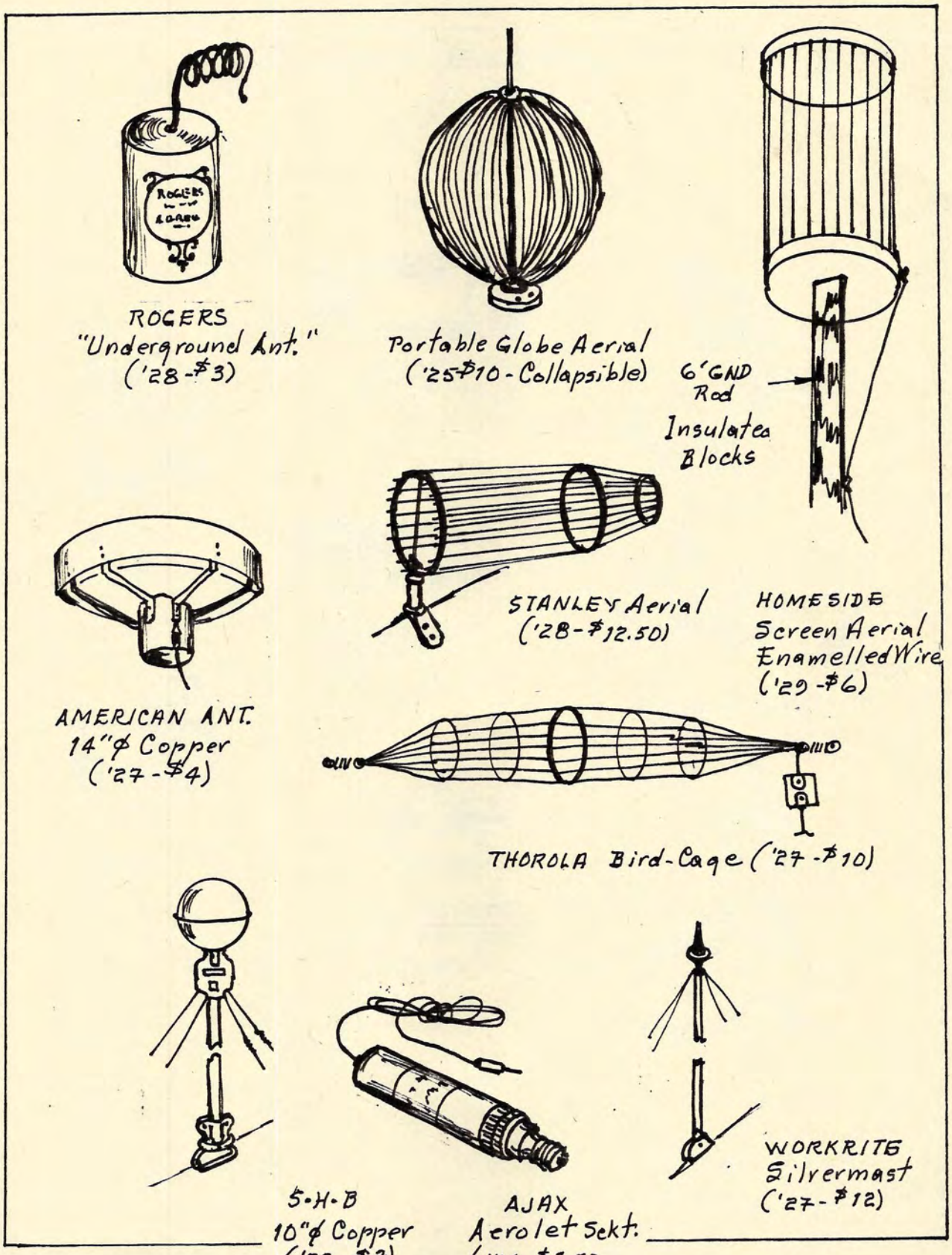
"Super-Unit"
HANSCOM RADIO, R.I.
('26-10)



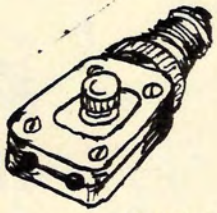
MADISON-MOORE
WAVE-TRAP
(1926-$6)



LEAD-IN
CONNECTOR
('26-.25)
(Doolan Mfg.)

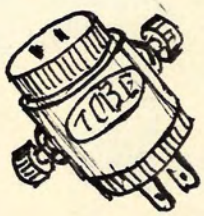

ROGERS
"Underground Ant."
('28 - $3)
Portable Globe Aerial
('25 $10 - Collapsible)
6' GND Rod
Insulated Blocks
STANLEY Aerial
('28 - $12.50)
HOMESIDE
Screen Aerial
Enamelled Wire
('29 - $6)
AMERICAN ANT.
14" ϕ Copper
('27 - $4)
THOROLA Bird-Cage ('27 - $10)
WORKRITE
Silvermast
('27 - $12)
S-H-B
10" ϕ Copper
('27 - $7)
AJAX
Aerolet Sckt.
('24 - $1.50

EARLY SOCKET AERIAL & GROUND DEVICES

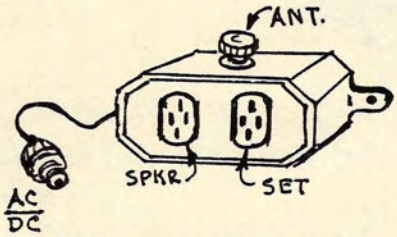


DUBILIER
"Ducon"
('25-$1.50)

DUBILIER
('25-$1.50)

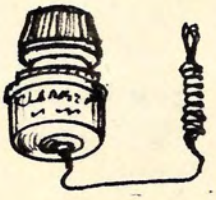


TOBE
('28-$2)

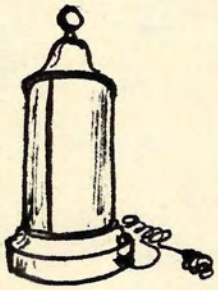


YAHR-LANGE
"Kabinetta"

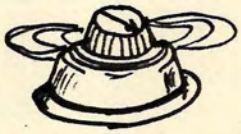
FRESHMAN
"Antennela"
('23-$1.25)



CLAROSTAT
('26-$1.50)

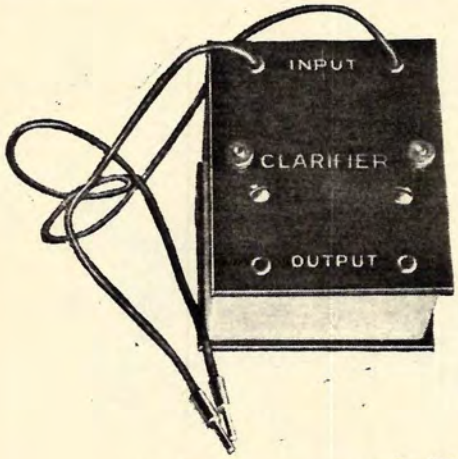


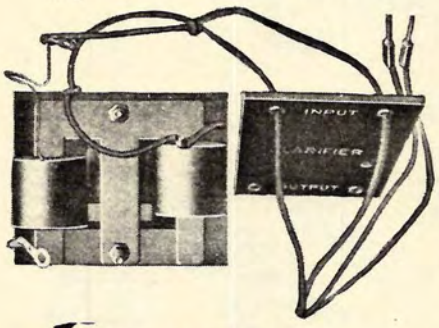
"RADIO-LITE"
ANT ('26-$7.50)



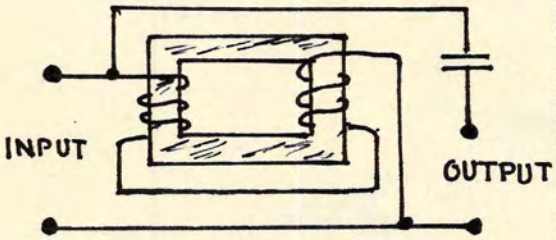
CARTER ANT
VOL. CONTROL
('29-$2)

EARLY AUDIO "CLARIFIER" UNITS

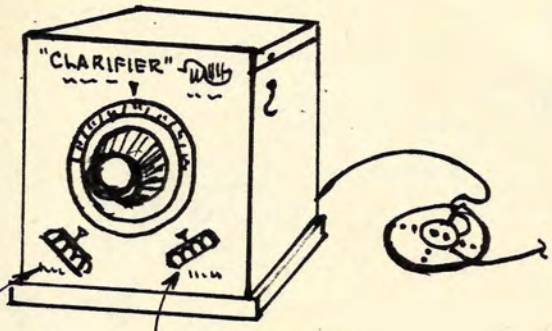




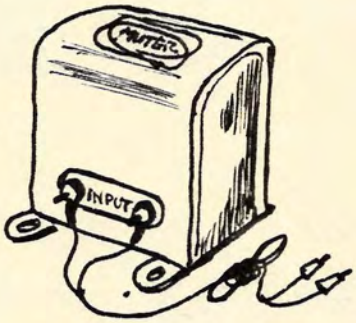
DUAL CHOKES



MUTER "CLARIFIER"
3" x 2½" x 1¾"
Bakelite Top & Bottom
Nickeled Brass Sides
(1926)

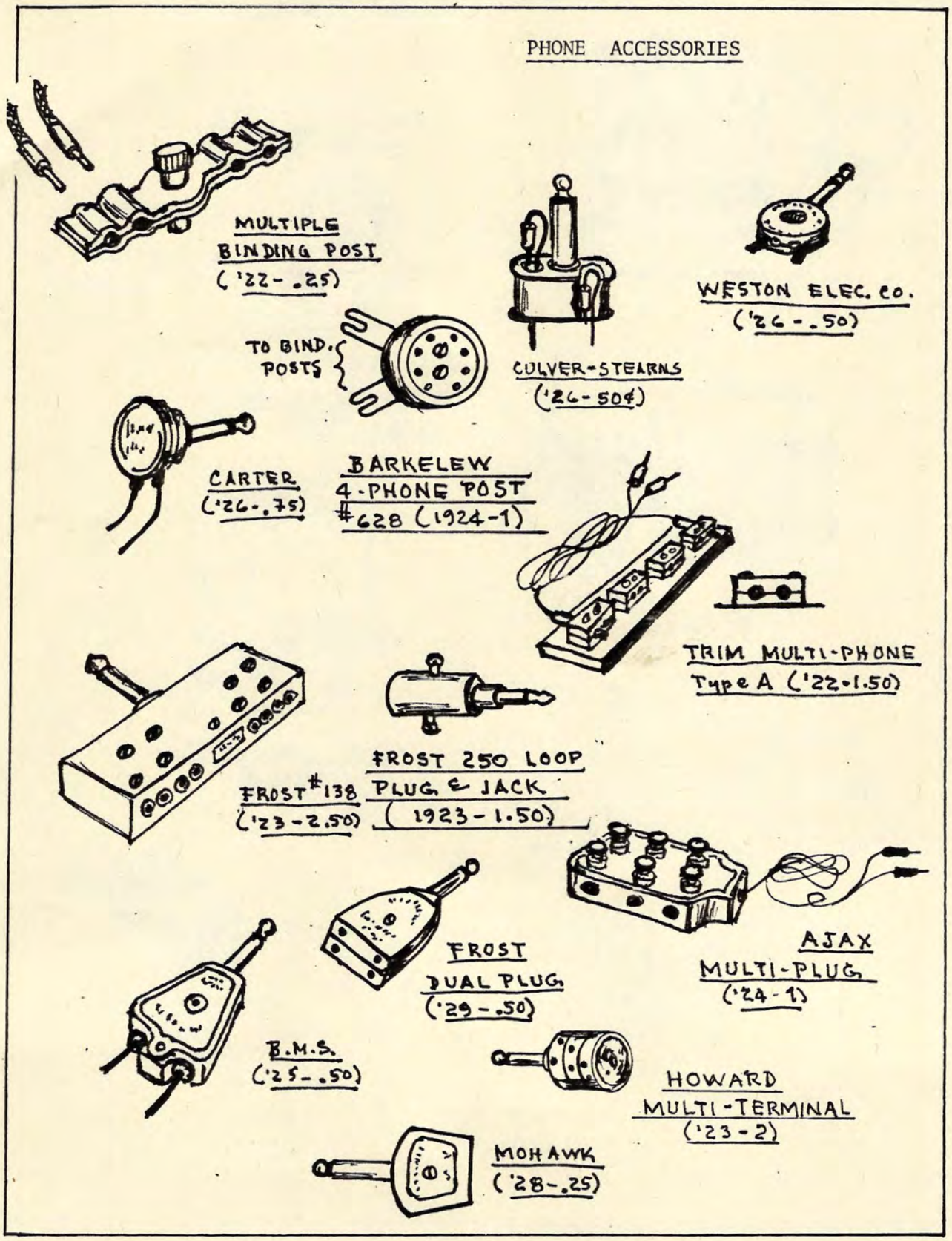


GREBE "CLARIFIER"
(1924 - $30)

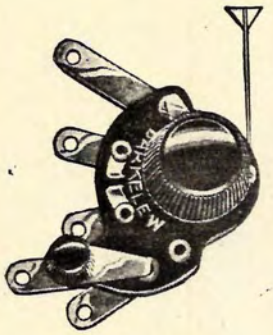


MUTER "CLARIFIER"
Hiler Patent
(1929 - $5)

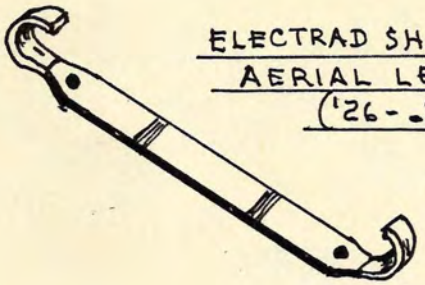
"CLAROCEPTOR"
FALCK
(1926 - $7.50)


PHONE ACCESSORIES
MULTIPLE BINDING POST ('22-.25)
WESTON ELEC. CO. ('26-.50)
TO BIND. POSTS
CULVER-STEARNS ('26-50¢)
CARTER ('26-.75)
BARKELEW 4-PHONE POST #628 (1924-1)
TRIM MULTI-PHONE Type A ('22-1.50)
FROST 250 LOOP PLUG & JACK (1923-1.50)
FROST #138 ('23-2.50)
FROST DUAL PLUG ('29-.50)
AJAX MULTI-PLUG ('24-1)
B.M.S. ('25-.50)
HOWARD MULTI-TERMINAL ('23-2)
MOHAWK ('28-.25)

ANTENNA DEVICES

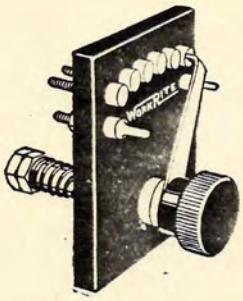


BARKELEW
ANT Selector
(1926-$1)

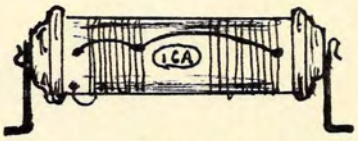


ELECTRAD SHIELDED
AERIAL LEAD-IN
('26-.25)

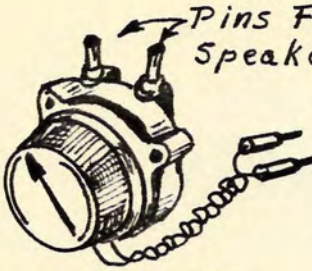
(Shielding Was Lead-Foil.)



WORKRITE
ANT TAP-SWITCH
(1923-$1)



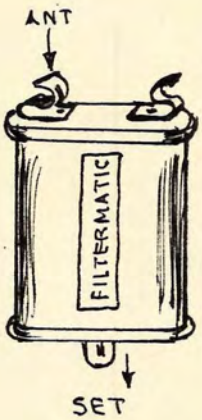
ICA
3-IN-1 TUNER #93
ANT/WAVE-TRAP
('26-1)



Pins From Speaker Here

To Set Spkr. or Phone Jack

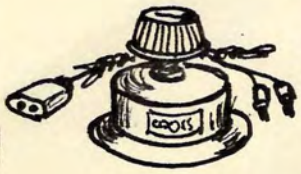
CLAROSTAT
External Tone Control
(1927-$1.75)
(Approx. Half-Scale)



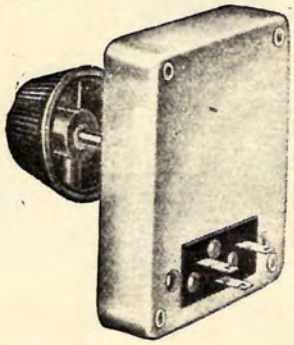
"FILTERMATIC"
Inside Aerial
('31-2.50)

X-L CONTROL:
ANT
GND
AC
(1927-$5)

AUDIO ACCESSORIES

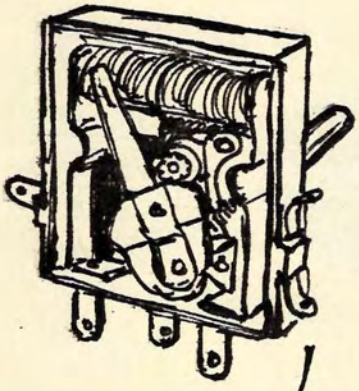


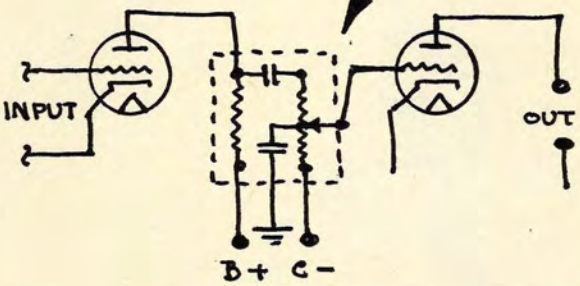
CLAROSTAT
TABLE-TOP
VOL. CONTROL



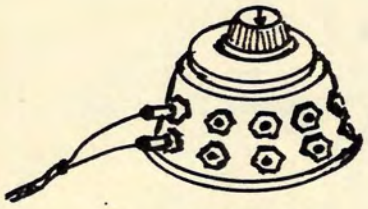
Super Tonatrol

ELECTRAD "Super-Tonatrol"-('29-2.50)

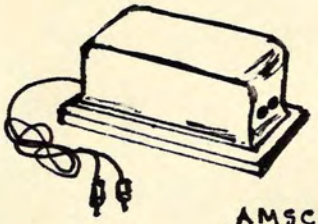




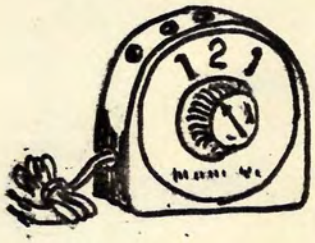
BRADLEYOHM AUTOMATIC
TONE/VOLUME CONTROL



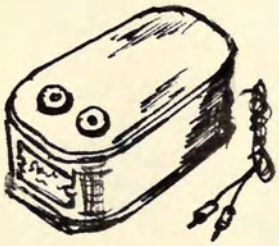
TEMPLE
L.S. COMPARATOR
('28-4)



AMSCO
"ORTHOPHONE" ('27-6)

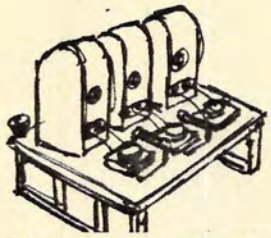


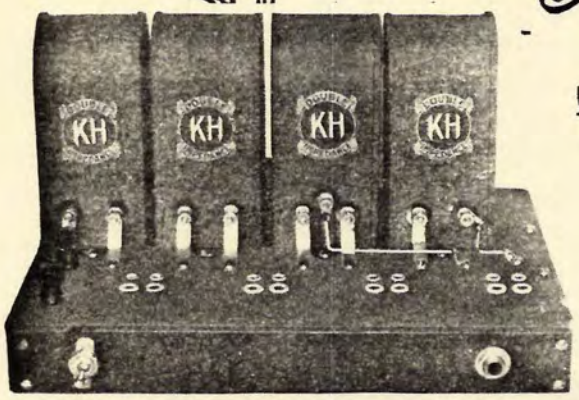
SPEAKER RELAY



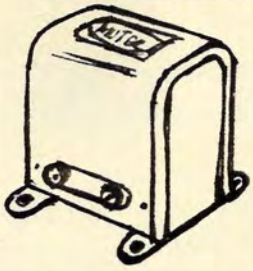
STERLING
SPKR. CPLR.
R-360
('27-5)

AUDIO IMPEDANCE-COUPLER UNITS

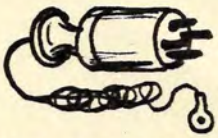




HILER DBLE. IMPED. TUNED
AF AMP. - MRKTD. BY HARKNESS.
(1927-'28)



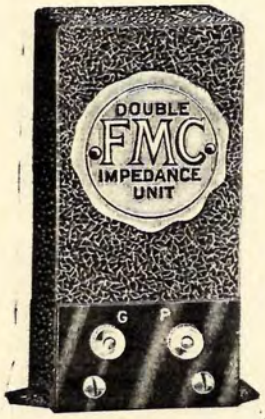
MRKTD. BY MUTER
(1927



POWER INPUT PLUG
Fits last AF sckt. &
impresses signal on
grid of pwr. tube
on amplifier.
(1929 - $1)

NATIONAL
'Impedaformer'
('27 - 5.50)
- 1MF & choke
Encased.

"TONE BRIDGE"
Jaynxon Labs
('26-10)



"Licensed under Hiler
Patent No. 1589692"

FORD RADIO & MICA
TUNED DBLE. IMPEDANCE
(Hiler Patent, 1927)

HILER-
KENNETH
HARKNESS
AF UNIT

A RADIO WIDOW

By RUTH DEAMER

My husband has a radio set,
He's had it just a year,
But if it stays another week—
I'm going away from here.

I'm tired of taking second place,
And don't see why I should;
I'm going back to Mother's,
For I know she'll treat me good.

We used to have just lots of fun
Before he got this pest,
And now that he's an amateur
He's nutty like the rest.

A "ham" drops in most every night,
Perhaps 6XYZ,
Or some such silly person—
Who has no use for me.

They turn the knobs, and twist the dials,
Change the wires too,
And wonder why—with single tubes
They can't hear Kalamazoo.

Some one comes on with music,
But as they start to play
We skip from "Red Hot Mamma"
To "The End of a Perfect Day."

A sermon or a recipe,
It doesn't matter which,
They're cut in two completely
When the boys decide to switch.

They talk about grid-leaks,
The rheostats, and such,
And if I change the subject
I'm sure "to get in Dutch."

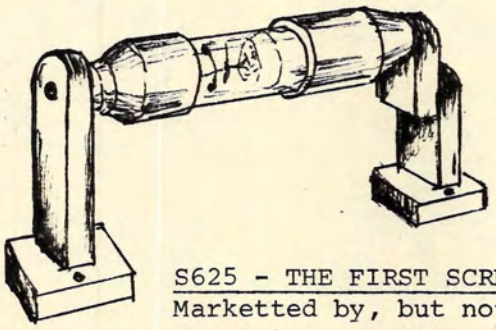
Thus we spend our evenings—
Or nearly every one,
So I can't see just where and how
I'm having any fun.

Since we don't go to dances
I'm getting stiff—and say!
If this keeps up I know for sure
I'll soon be turning gray.

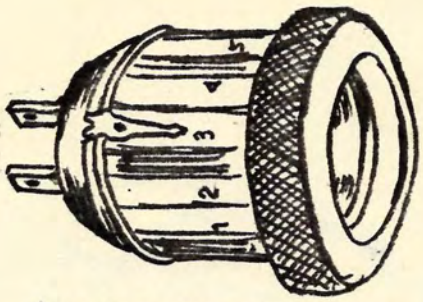
And so this world and then the next,
But I hope where 'er I go
The place won't be all cluttered up
With some old radio.

(1923)

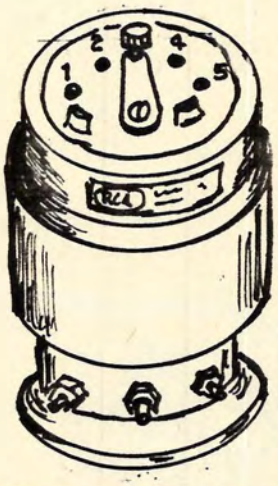
HARDWARE & ACCESSORIES



S625 - THE FIRST SCREEN-GRID VALVE
Marketted by, but not invented by, Marconi-Osram, Summer, 1927;G.B.



VOLTAGE CONTROL SWITCH



FILAMENT CONTROL
RCA UP-1658
(1923 - $12)

"UNITROL" - Filament Control; One For Each Tube. ('26 - $1)

ACCESSORIES

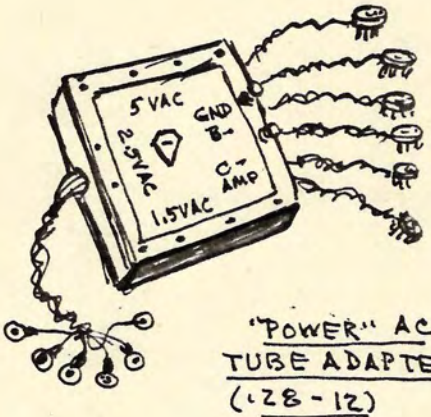
"TRUVOLT"
TYPE "V", C.T., AC TUBES
('27 - '28)

CROWE
CABLE
MARKERS

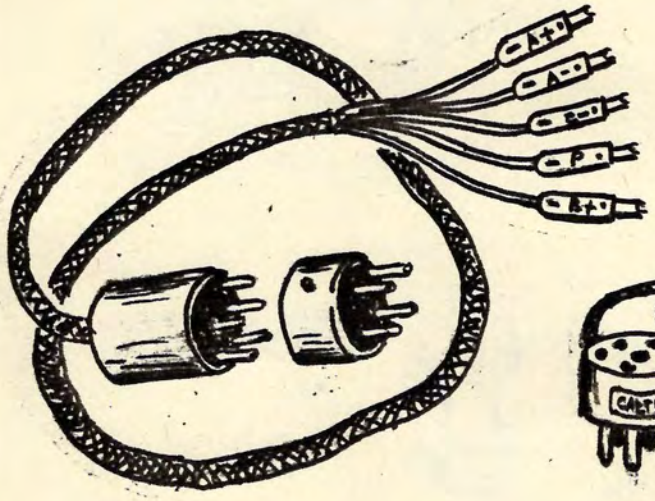
('26)

WESTINGHOUSE "PIN-JACK
VOLTMETER" - ('27-3)

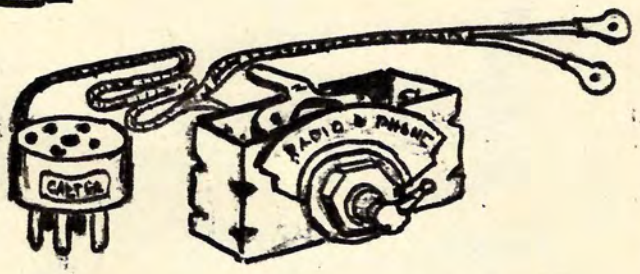
HOWARD FIXED COND.
(1924 - '60)



"POWER" AC
TUBE ADAPTER
('28 - 12)

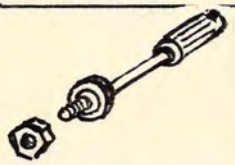


S.W. ADAPTER
PLUG & CABLE



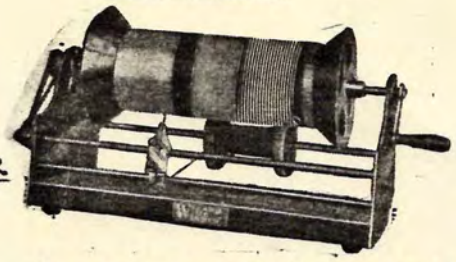
CARTER RADIO-PHONOGRAPH
ATTACHMENT - ('27)

ACCESSORIES

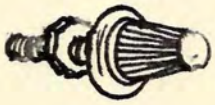


VERNIER TOOL
('25 - .10)

SCREEN-GRID
CAPS - CARTER
(1929)



"WIZARD" COIL WINDER



VERNIER KNOB

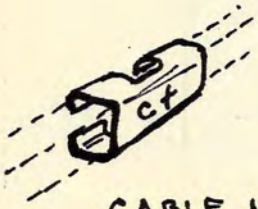
S-G CLIP
FAHNSTOCK
(1929)

FLEWELLING
VERNIER
('26 - .50)

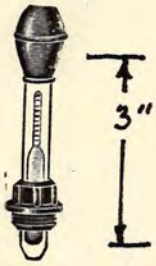
MORSING SQUARE
BUSS-BAR UNION
Newark Watch
('25 - .10)

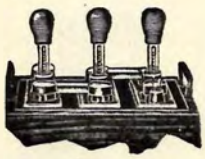
VARIABLE COND.
TR CLEANER
('26 - .10)
(Was Pipe-Cleaner!)

CARTER PLUG-IN
CAPACITORS ~
(.01 MF & .04 MF only)
('26 - 1)



CABLE MARKER



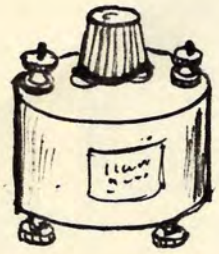


DIAL
POINTERS
('26 - .10)

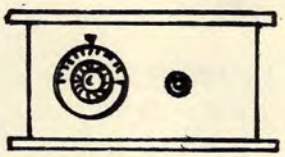
HYDROMETER
IN-A-CAP HYDRO. CO.

Screwed into each batt. cell & left there, even when charging.
('26 - 3 for $2)

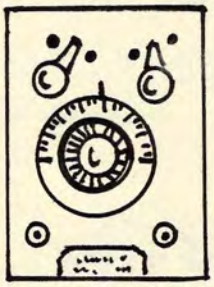
STATION ISOLATORS/PRE-AMPLIFIERS



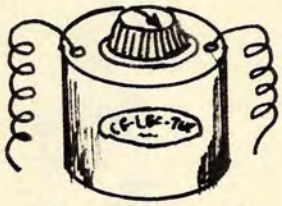
"STATION ISOLATOR"
D.C. PHIPPS
(1925 - $15)



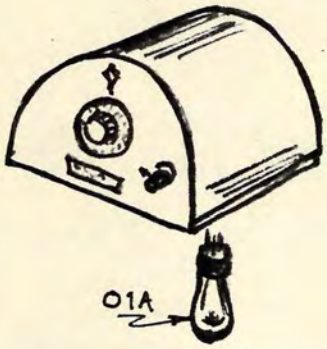
"STATION ISOLATOR"
Super-Amp Co.
(1925-$12)



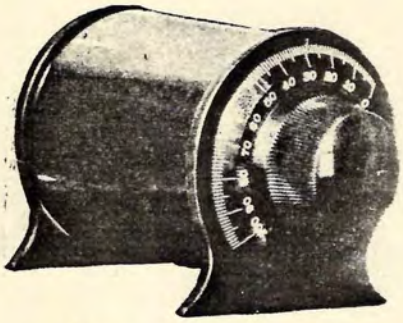
TWITCHELL
"STATION ISOLATOR"
(1925 - $15)



"CE·LEC·TOR"
TRUTONE RADIO
(1929 $6.50)

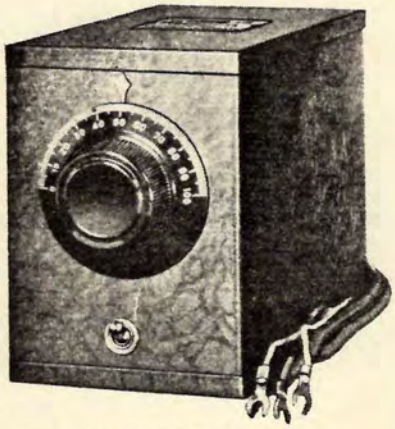


SARGENT-RAYMENT
(1927 - $17.50)
(See "Infradyne" Monograph)



"REESONATOR" - $4.75

WIRT
(1922-$3)



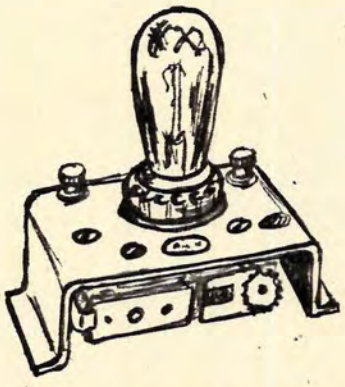
Sterling Pre-Amplifier
(1926)

Tune them out and KEEP *them out with* Filtrola STATION ELIMINATOR

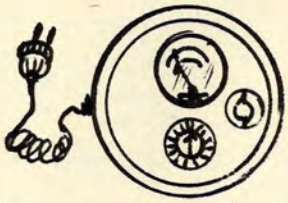
This attractive compact unit, complete in itself, makes it a simple matter to tune out interfering stations you don't want—even the most powerful. No tubes, batteries or other units to install. A typical All-American product in its precision and quality of workmanship.

Price $15

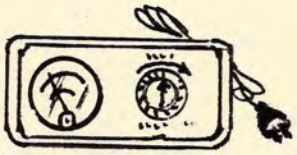
MISCELLANEOUS EARLY ELECTRICAL DEVICES



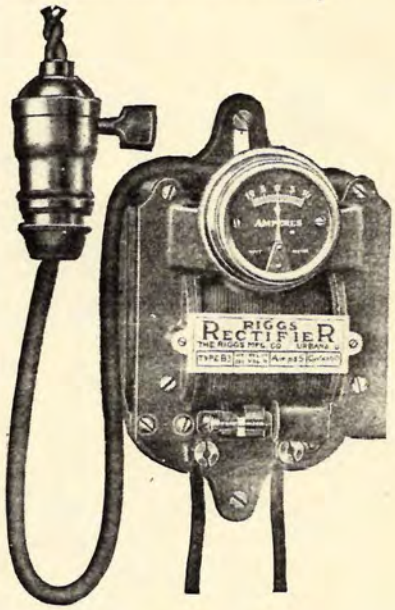
APCO "B" BATTERY CHARGER - (1926 - $4)



READRITE
A-C CONTROL
(1928 - $6.50)

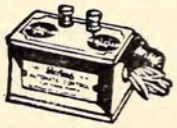


BEEDE
A-C CONTROL
(1928 - $8)

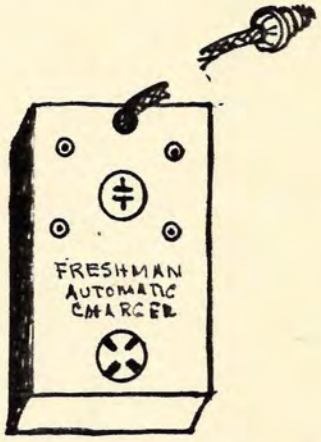


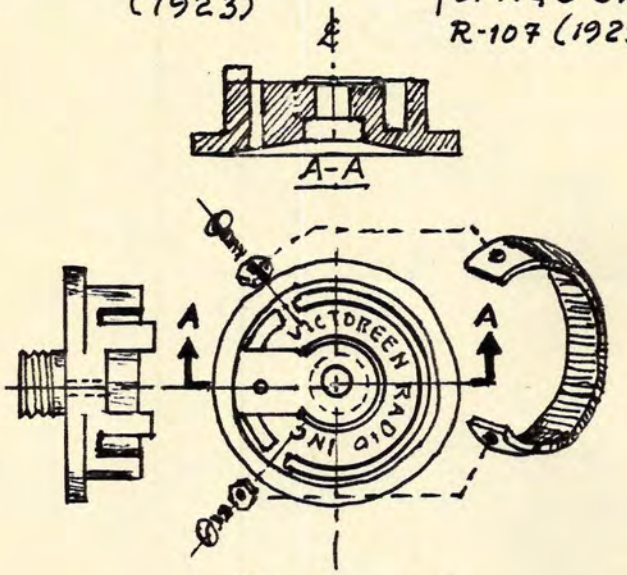
RIGGS RECTIFIER
(1923 - $12.50)

(1923)



STERLING
Automatic Switch
for A & B Units.
R-107 (1923 - $5)



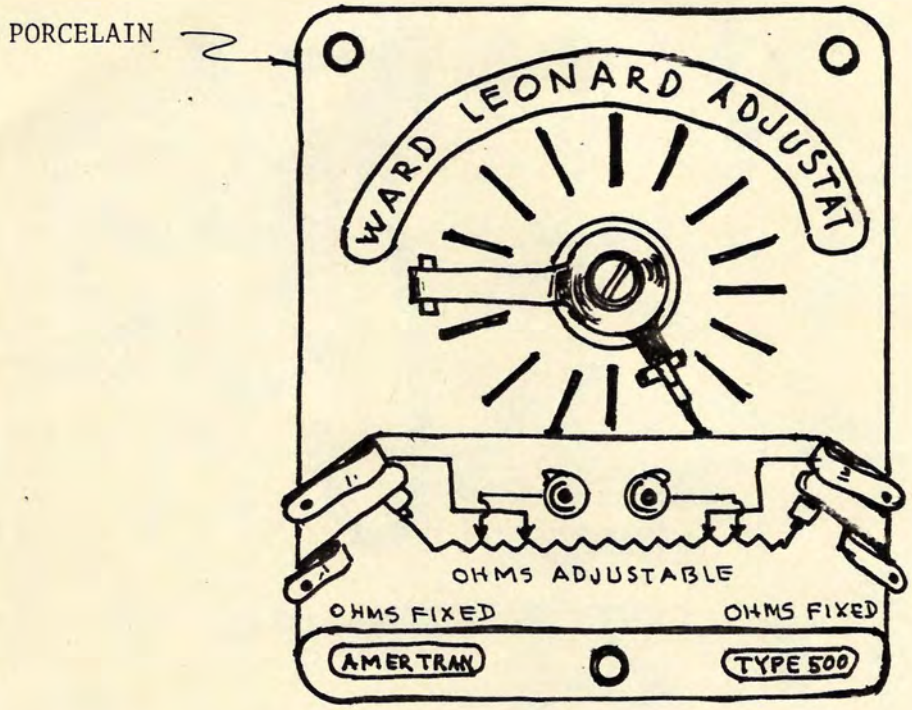


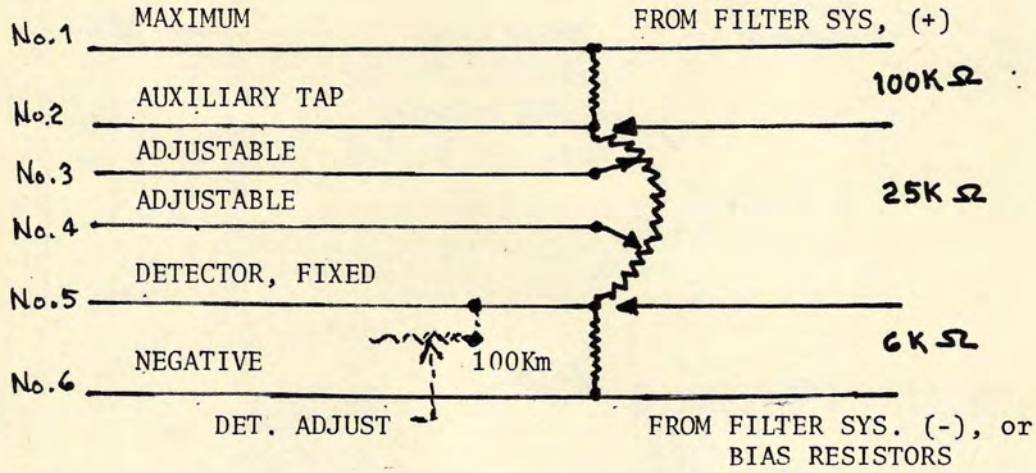
(1926 - .75¢)

VICTOREEN POTETIOMETER
MOULDED FORM

An excellent example of the precision moulding "BAKELITE" was capable of in the Twenties.
(Full Scale.)

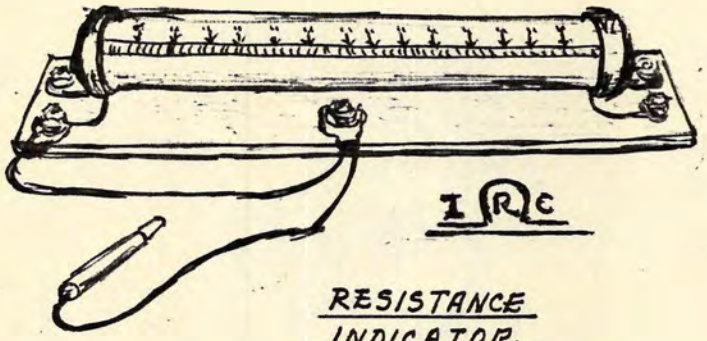
THE WARD LEONARD "ADJUSTAT" VOLTAGE DIVIDER, 1929



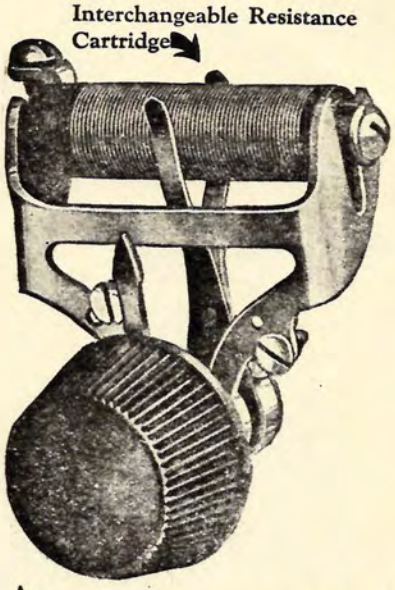


Calibration Data: Tap No. 1 = Max. Volt.; No.2 = 135V; No.3 = 20/135V; No. 4 = 20/135V; No. 5 = 40V; No. 6 = B-.
Separate resistors must be employed to provide C-bias. Input terminals of unit connect to output of the B-eliminator, or the (+) lead from the filter & C-bias resistance. Insertion of a variable resistance at the dotted line permits varying DET B+ voltage 10 to 40V.

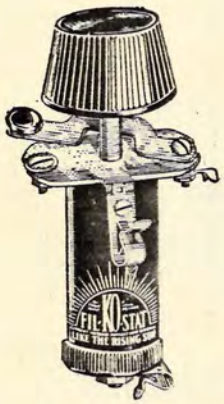
EARLY RESISTANCE CONFIGURATIONS



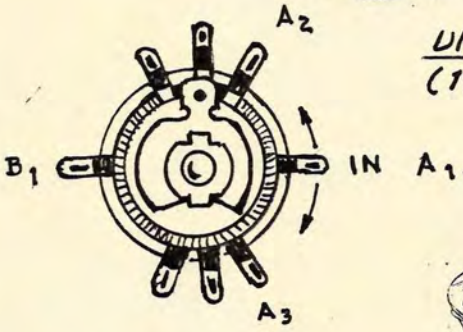
RESISTANCE INDICATOR (1933 - $4)



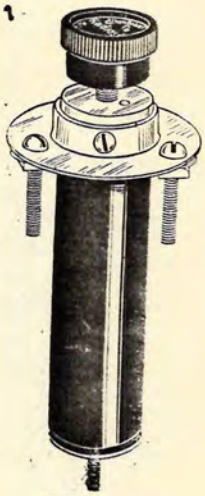
UNITY MFG. CO (1924 - 80¢)

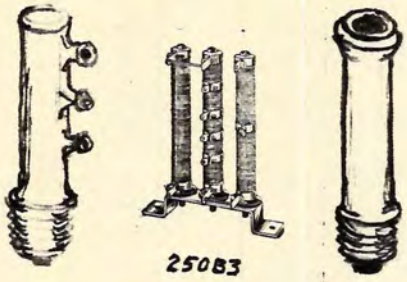


"KIL-KO-STAT" (1921 - $2)



MULTIPLE RHEOSTAT
(Rere View)
A_1-B_1 = 15Ω
A_2-A_3 = 41Ω
A_1-A_3 = 20Ω
A_3-B_1 = 41Ω



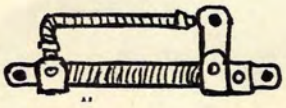


WARD LEONARD
Voltage Dropping & Divider Resistors
(1924

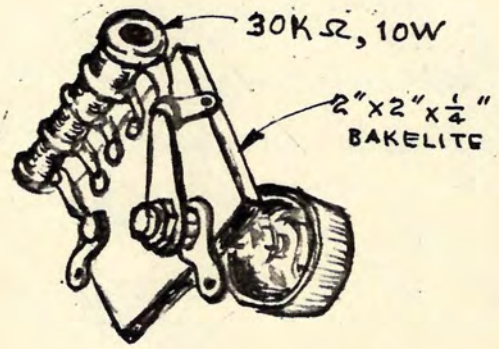
ELECTRAD

ALLEN-BRADLEY "Radiostat" (1923 - $1.50)

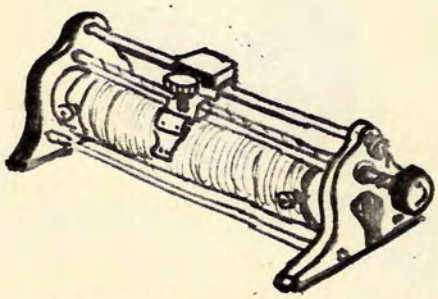
EARLY RESISTOR CONFIGURATIONS



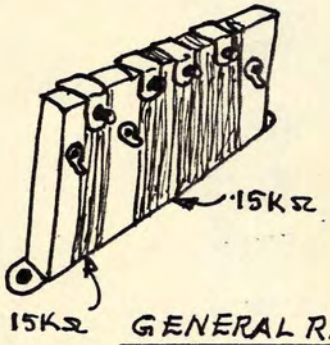
DRESNER #84
0-1KΩ
(1926 - 40¢)



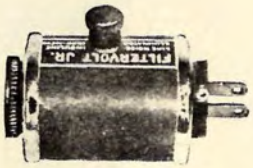
TAPT RESISTOR ASSY.



H.T. TUBULAR RHEOSTAT
(1930 - $7)

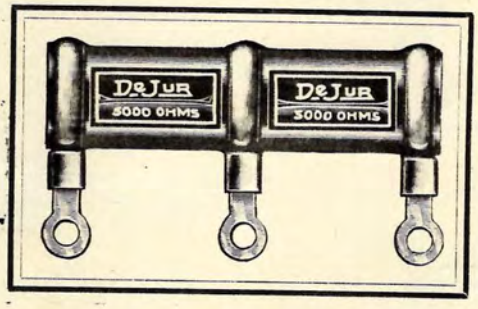


GENERAL RADIO
Volt. Divider
#446 - 300V
(1928 - $2.75)



"FILTERVOLT"
I.C.A. (1929 - $3)

MASTER
VOLT. CONTROL
100W
(1929 - $3)



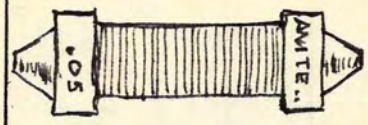
(1928)

RESISTOR CONFIGURATIONS

DURHAM
"Metallized" Ω

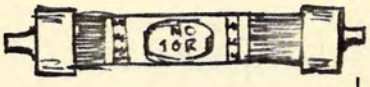
"RALSA"
Davidson Radio Corp.

TOBE
"Veritas"

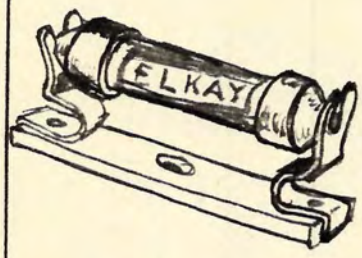


AEROVOX
"Havite" Resistors

AMSCO



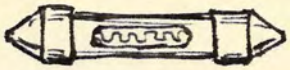
ALLEN-BRADLEY



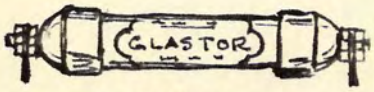
ELKAY
"Tube Equalizer"

"AMPERITE"
Radiall Company
(Filament Control)

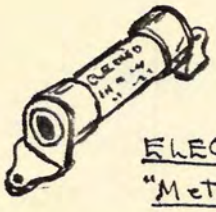
AMSCO
"FILATROL"
(Filament Control)



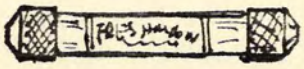
DAVEN



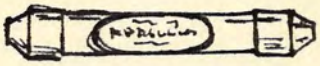
DAVEN



ELECTRAD
"Metallic"



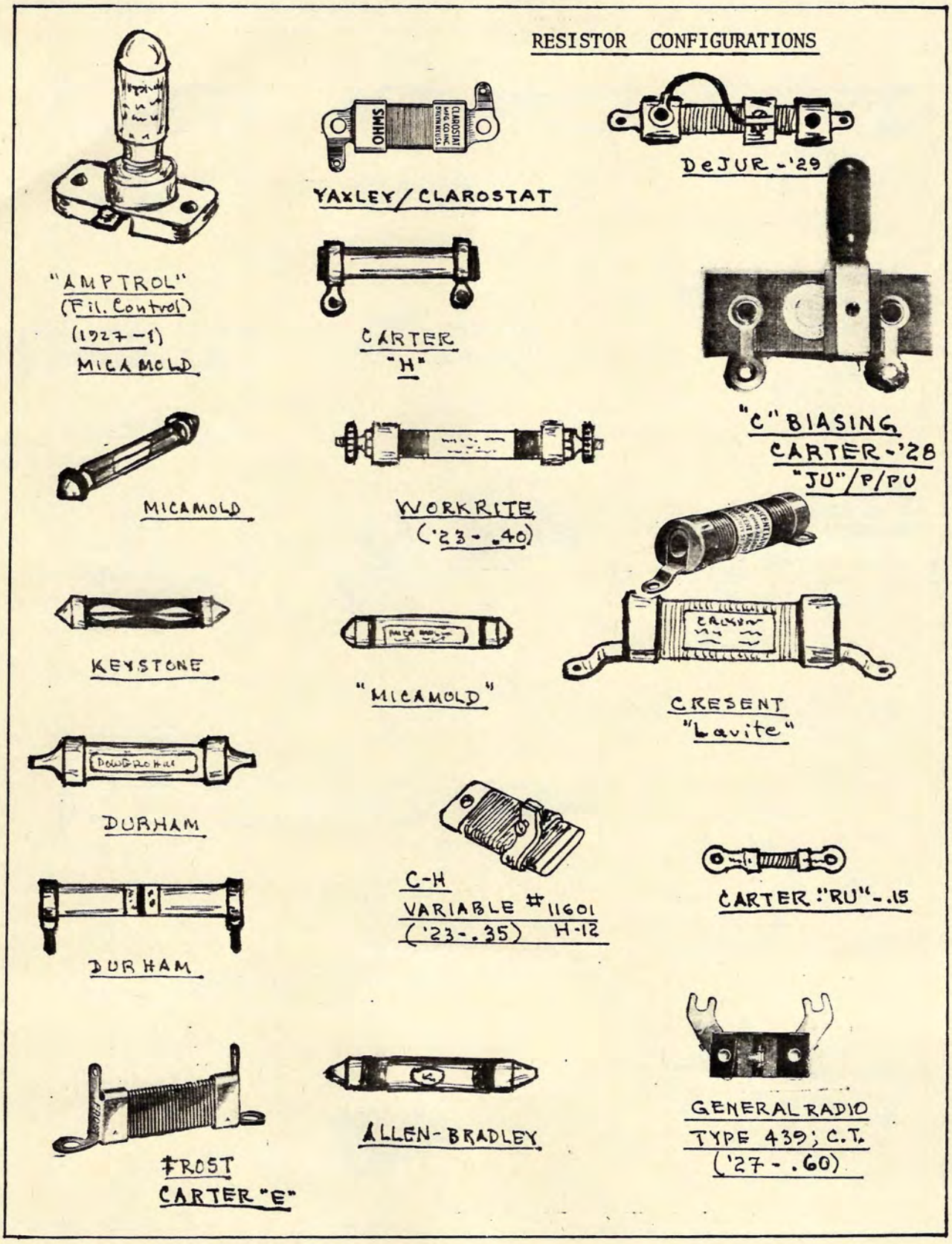
FRESH MAN



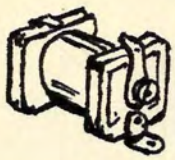
POLYMET
"Metallized"

LYNCH
"Metallized"

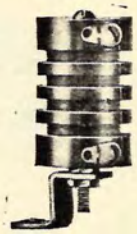
MUTER


RESISTOR CONFIGURATIONS
"AMPTROL"
(Fil. Control)
(1927-1)
MICAMOLD
YAXLEY/CLAROSTAT
DeJUR-'29
CARTER
"H"
"C" BIASING
CARTER-'28
"JU"/P/PU
MICAMOLD
WORKRITE
('23-.40)
KEYSTONE
"MICAMOLD"
CRESENT
"Lavite"
DURHAM
C-H
VARIABLE #11601
('23-.35) H-12
CARTER "RU"-.15
DURHAM
GENERAL RADIO
TYPE 439; C.T.
('27-.60)
FROST
CARTER "E"
ALLEN-BRADLEY

R.F.C. CONFIGURATIONS (RADIO FREQUENCY CHOKES)



SAMSON
(1924)

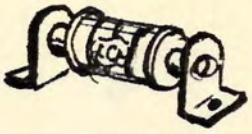


PRECISION #340

BREMER-TULLY
(1925)

S-M

REMLER
(1.5mH)
('28-.90)



I.C.A.

HAMMARLUND
(1925)

SAMSON
(1925)

I.C.A.

HAMMARLUND
(1926) (2.25)
(65mH - 250mH)

DeJUR

(1920)

AERO 60
(MUTER SAME)
('26-1.50)
(60mH)

SAMSON-1926

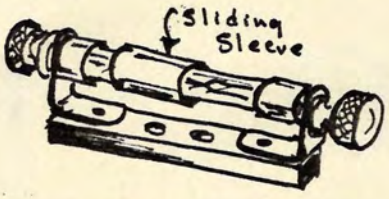
ERLA
('26-.60)

BOTT. VIEW

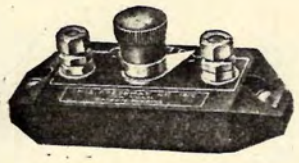
PRIESS
(1926)

DRESNER #85
('26-.75)

GRID-LEAK & NEUTRALIZING CONDENSER CONFIGURATIONS

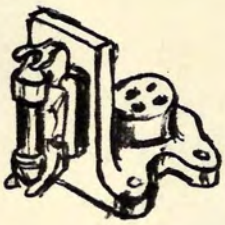


Reliable Neutralizing Condenser - ('26-.60)

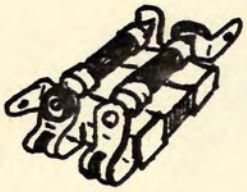


Freshman Combination Grid-Leak - '25

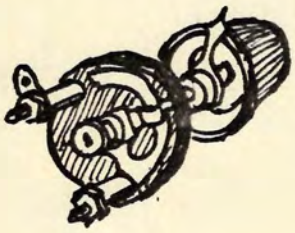
Durham Combination ('26-60¢)



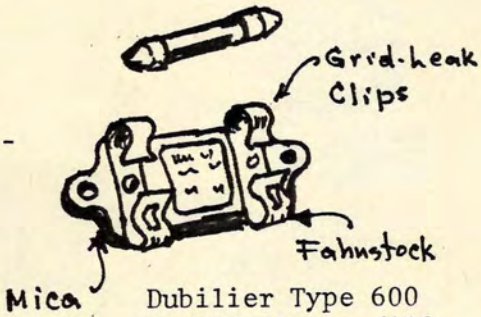
Eby Combination



Dubilier "Microdon" Type 6464, Combination Grid-Leak & Condenser - ('26 - 1)

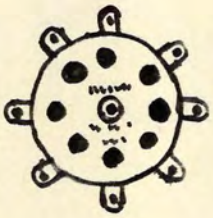


Walnart Variable Grid-Leak - ('24 - 1)



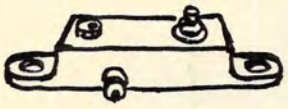
Dubilier Type 600 Combination - ('22 - .75)

Bradleyleak



Premier 7-In-1 Variable Grid-Leak - ('22 - .50)

GRID-LEAK & NEUTRALIZING CONDENSER CONFIGURATIONS



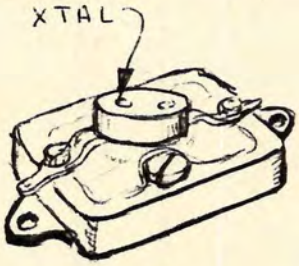
BREMER-TULLY (1926)

SLEEPER "STABILIZER" (1925)

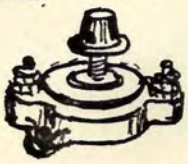
SAMSON (1925)

REMLER VARIABLE GRID-LEAK - (1922 - .40)

DURHAM VARIABLE GRID-LEAK - ('25 .75)

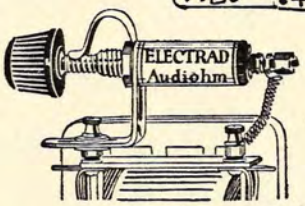


B.M.S. XTAL. DET. w/ ADJUSTABLE CAPACITOR



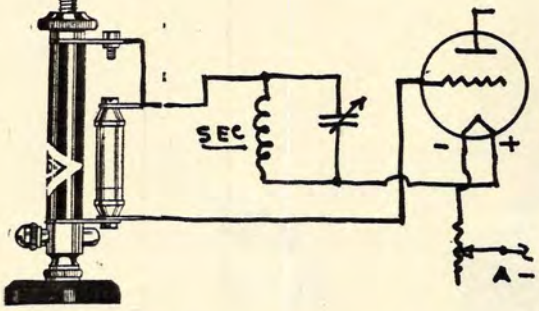
PILOT MICROGRAD

"ACCURATE" VARIABLE (MUTER "VARI-ALL" SAME) (1925 - .40)

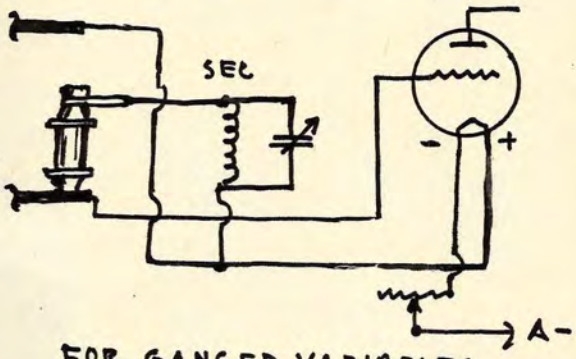


ELECTRAD "Variohm"

BRETWOOD VARIABLE LEAK (G.B.)

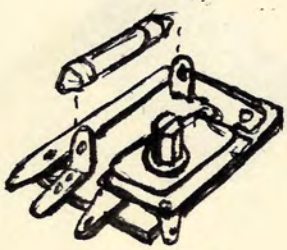


CONVENTIONAL HOOK-UP

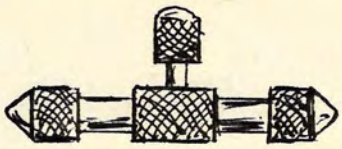


FOR GANGED VARIABLES w/ 200A / 300A DET.

GRID-LEAK & NEUTRALISING CONDENSER CONFIGURATIONS



GRID-LEAK/CON. ASSY.
(GREBE)



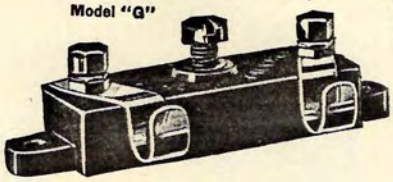
VARIABLE LEAK
CUNNIGHAM (1926-.75)

Model "N"

X-L

ADJUSTABLE GRID-LEAK
Central Radio Labs.
(1923 - 1.85)

Model "G"



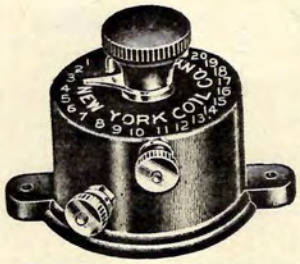
BREMER-TULLY
MIKRO-MIKE COND.
1926-1

EUROPEAN
(1924-$1.20)

ARKAY VERNIER ADJUSTER

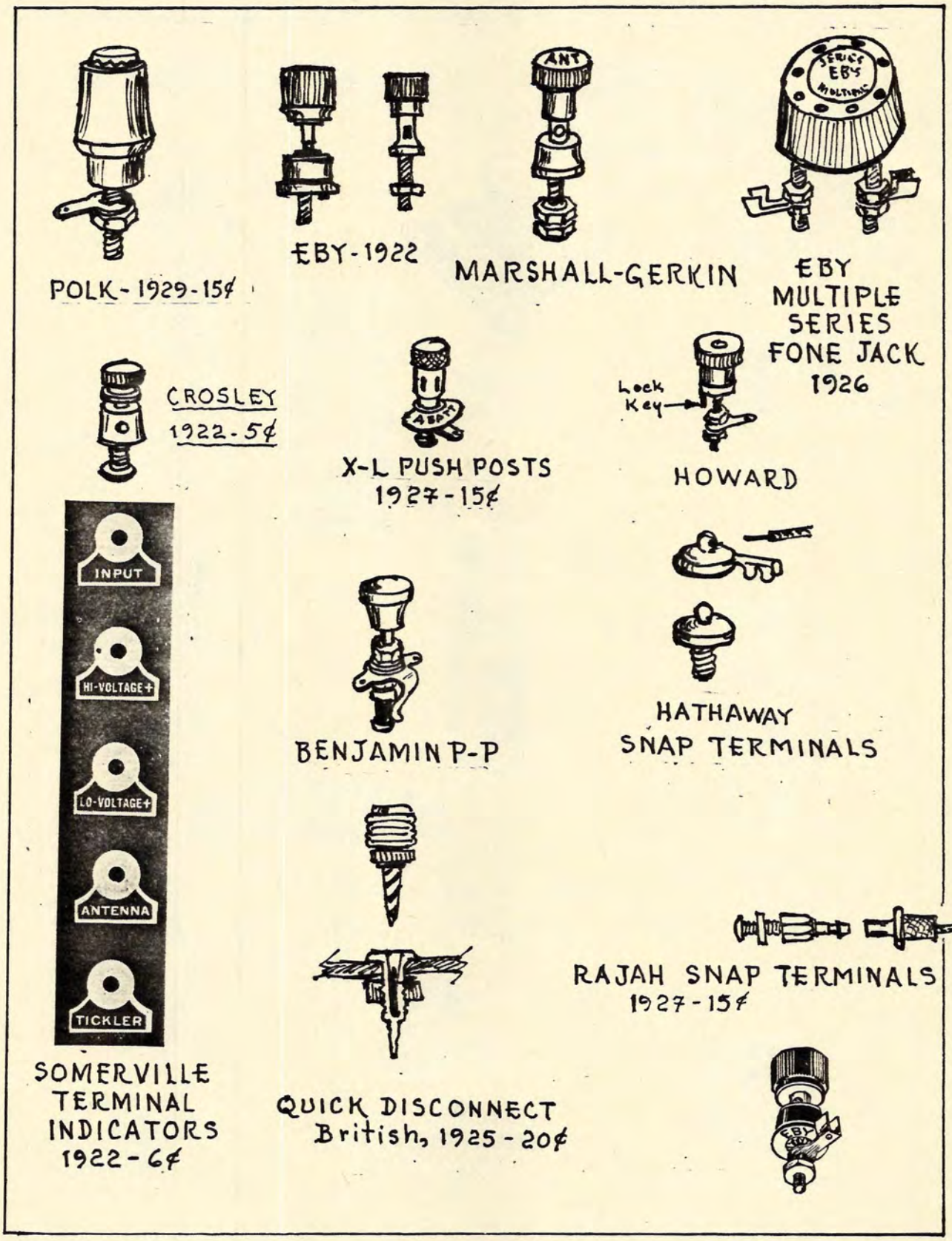
N.Y. COIL
(1924.-$1.50)

VERNIERS -
HAYDON & FENTON

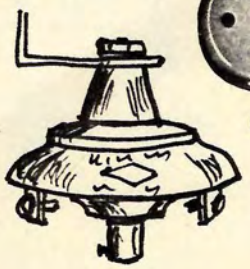


STERLING
R311 MICROCONDENSER

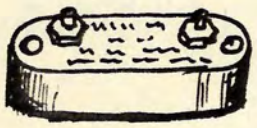
TERMINAL & BINDING POST CONFIGURATIONS



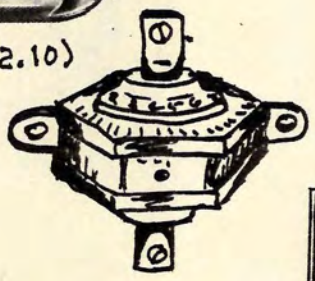
EARLY LIGHTNING ARRESTERS



(1926 ~$2.10)



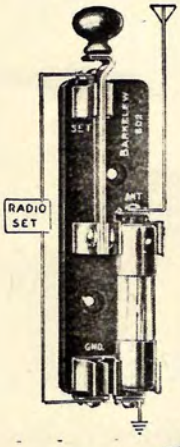
BRACH, 1922

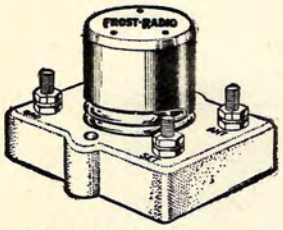


KESTONE
(1925-1.50)

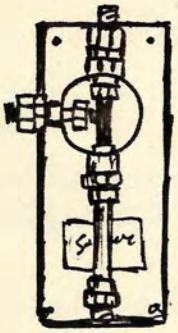
HORNE
(1921)

FIL-KO-ARRESTER
(1926, 1.50)

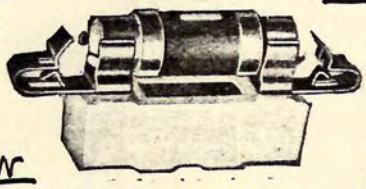




No. 700
FROST
(1922, 1.50)



SIDBENEL #202
(1922, 3)



BARKELEW
(1922, 3.50)

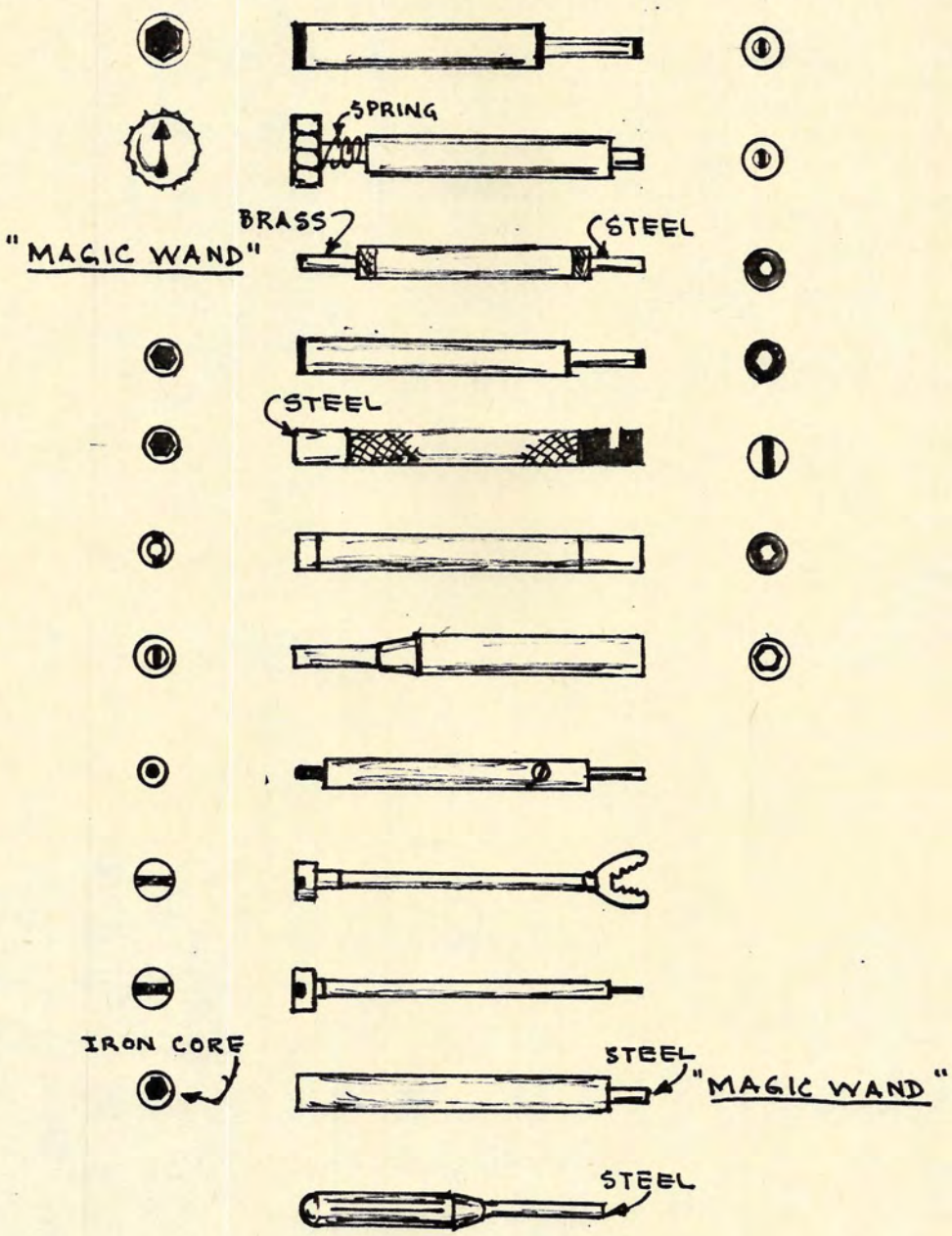
BRACH-1919
(Vacuum)

BRACH
(1925)

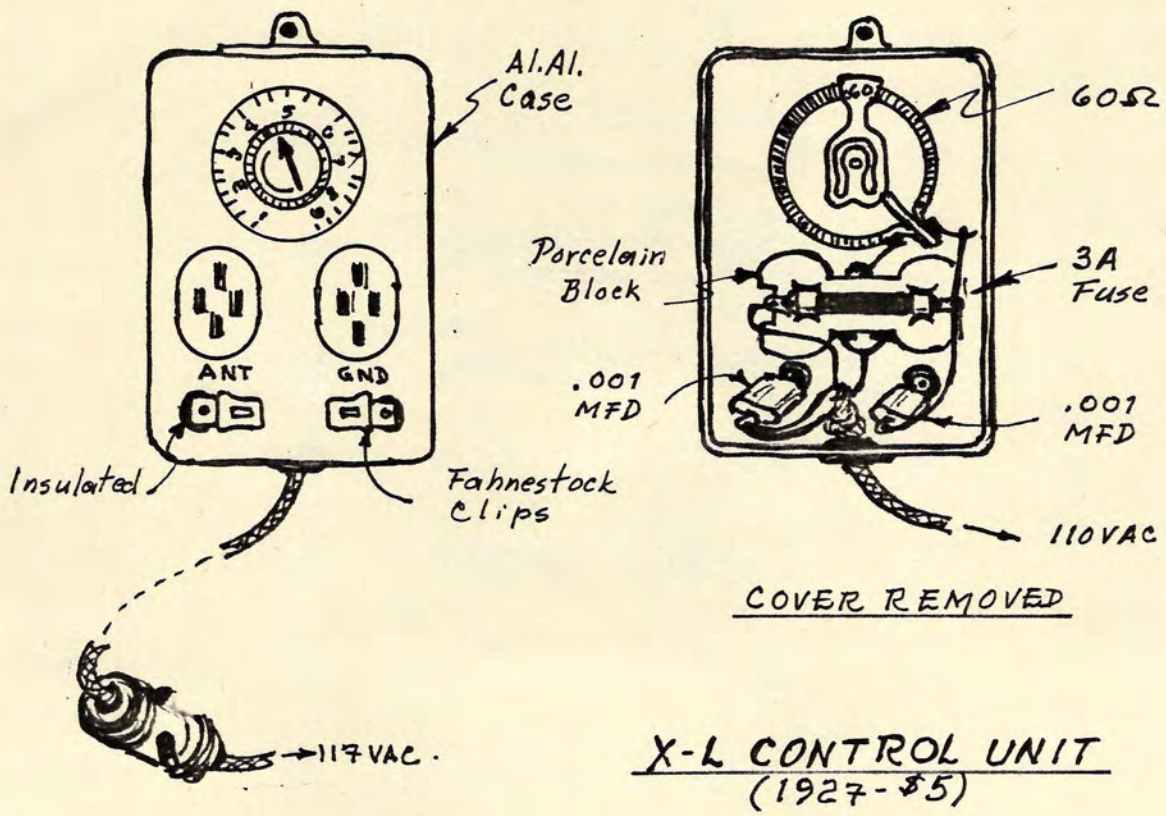
"SAFEGUARD"
SWAN-HAVERSTICK
(1926-3.50)

JEWELL, 1926, 1.10

ALIGNMENT TOOL CONFIGURATIONS

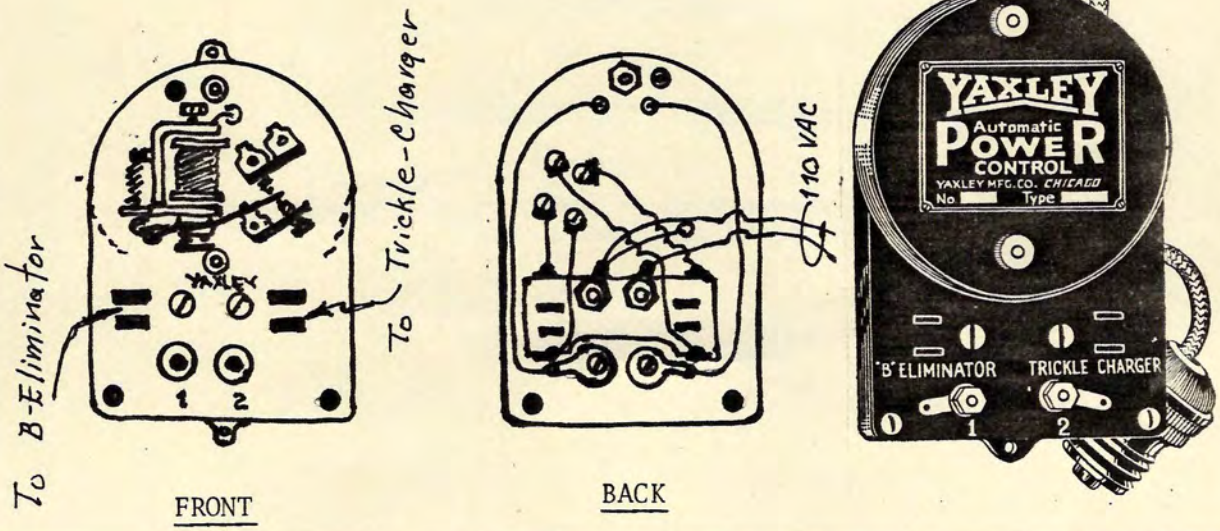


EARLY CONTROL DEVICES; 1925-1927



X-L CONTROL UNIT
(1927-$5)

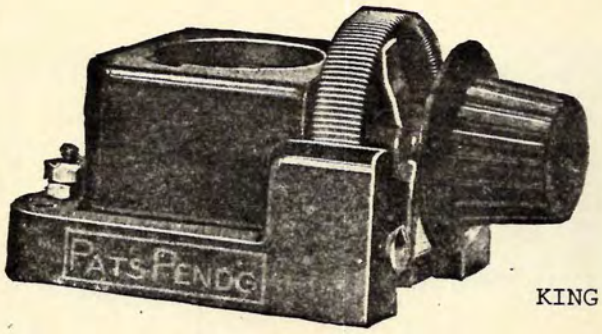
YAXLEY AUTOMATIC CONTROL DEVICE, 1927

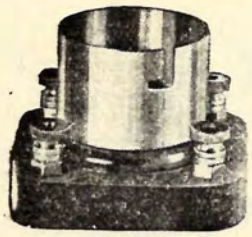


FRONT

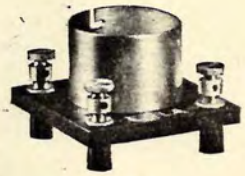
BACK

CONFIGURATION OF TUBE SOCKET EVOLUTION OVER THE YEARS

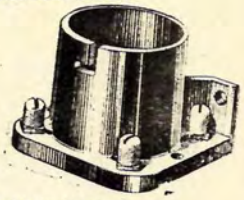




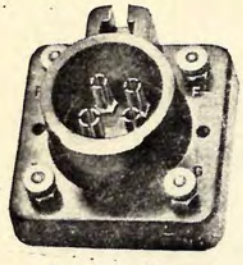
KING - Combined sockets & rheostat.



ERLA

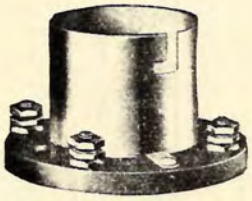


RAULAND

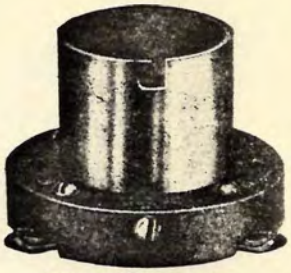


SE-AR-DE
WD-11

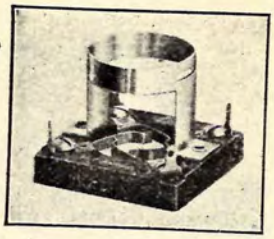
NA-ALD



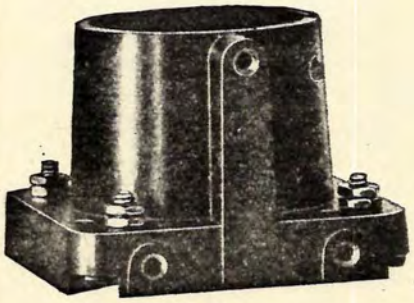
DAYTON



TYPE 156 SOCKET
G.R.



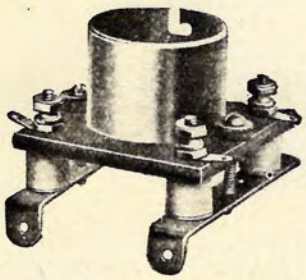
WEIN



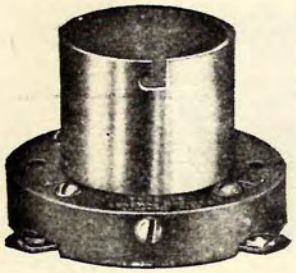
RADAK H-T

COTOGRIP

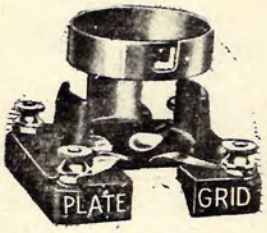
TUBE SOCKET DESIGN EVOLUTION.



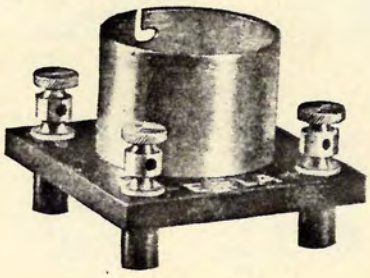
SIGNAL-85¢



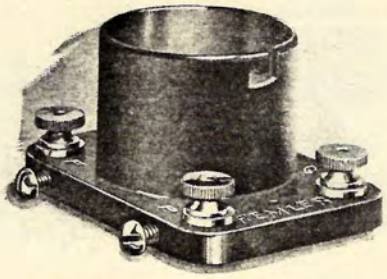
GENERAL RADIO
#156 (1921-$1.50)



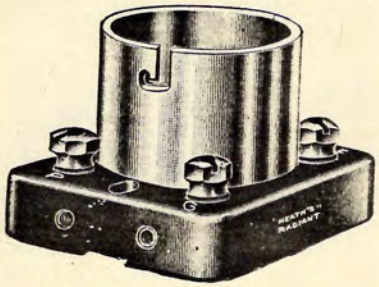
AIR-GAP-$1
(1925)



ERLA-$1



REMLER #92
(1921-$1.50)



HEATH-85¢

(UX) #2 (UV)

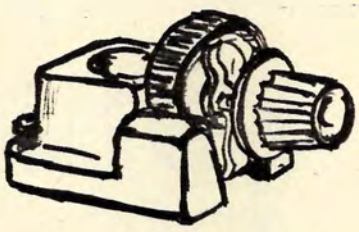
RADION
SOCKETS
(1924-$1.50)

UX #4

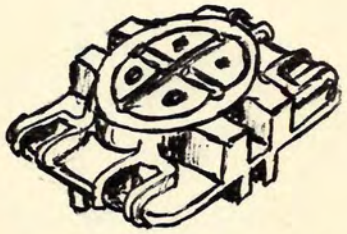
NA-ALD-#499-$1.25

TUBE SOCKET CONFIGURATIONS

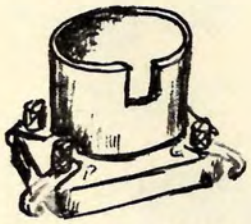
GENERAL RADIO
Type 299



KING RHEO-SOCKET
(1922)

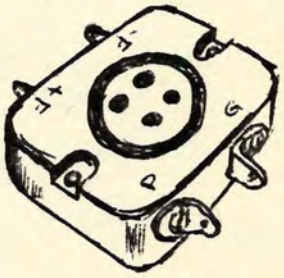


AMPHENOL SCKTS. #196-1
-124



BREMER-TULLY

FROST #700 PROTECTOR

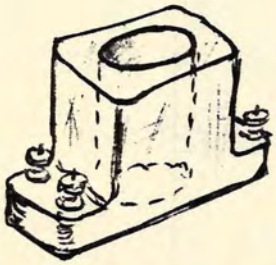


REMLER Type 50

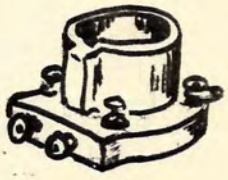
#111-A

#110-A

SILVER-MARSHALL
COIL SCKTS.



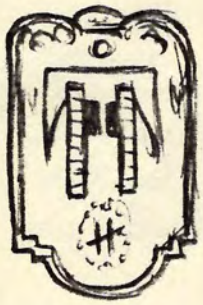
DURAY ALL-GLASS SCKT.



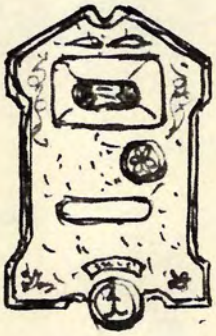
REMLER UX SCK
(Also Used By B-T.)

BENJAMEN SCKTS.
FOR S-M COILS

VINTAGE DIALS, KNOBS, & ESCUTCHEONS

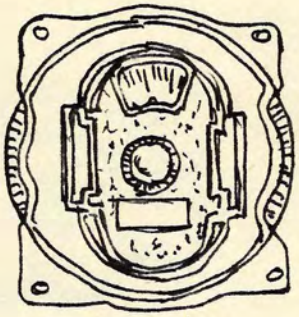


HAMMARLUND
Double Drum

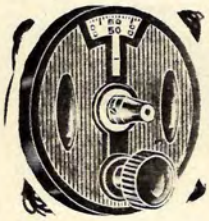


PIERCE-AIRO

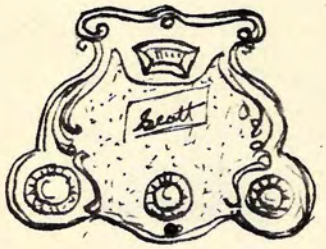
ART-DECO
(1930)



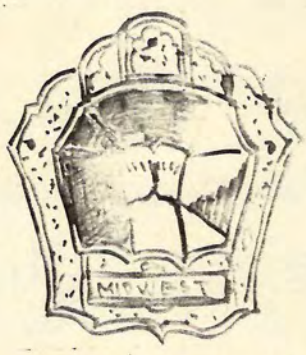
BELL-'25



RATHBUN-'24



SCOTT

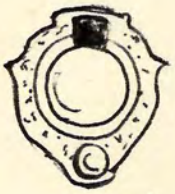


MIRACO (MID-WEST)

KELLOGG -1927

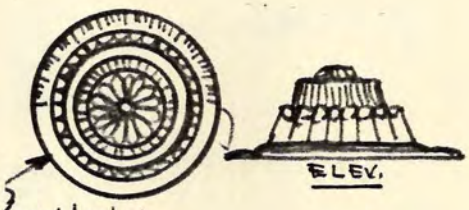
BREMER-TULLY

KURZ-
KASCH



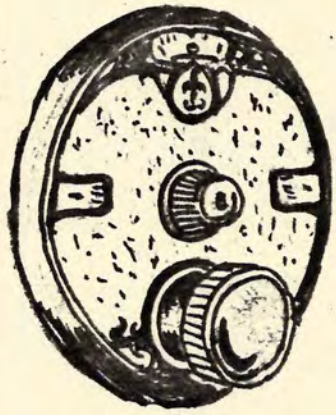
VINTAGE DIALS, KNOBS, & ESCUTCHEONS

PHENIX (LACAULT)



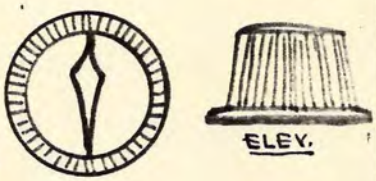
RADION

MAR-CO (Wood)
('26)



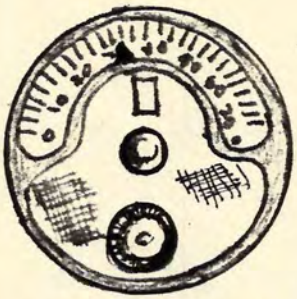
EBY ('26)

CORNELL (BRASS)
('27)



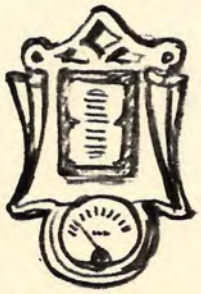
BREMER-TULLY,
('26)

PACENT
("Microvernier")
('26)



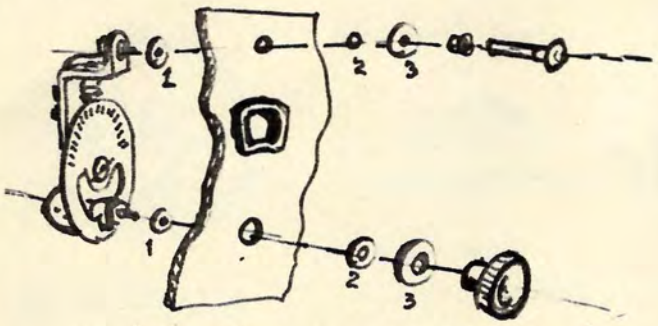
LONGHMAN ('26)

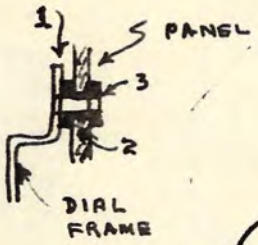
RADIALL
"Tune-Rite"



ESCUTCHEON
w/ VOLT METER
(Crowe)

VINTAGE DIALS, KNOBS, & ESCUTCHEONS



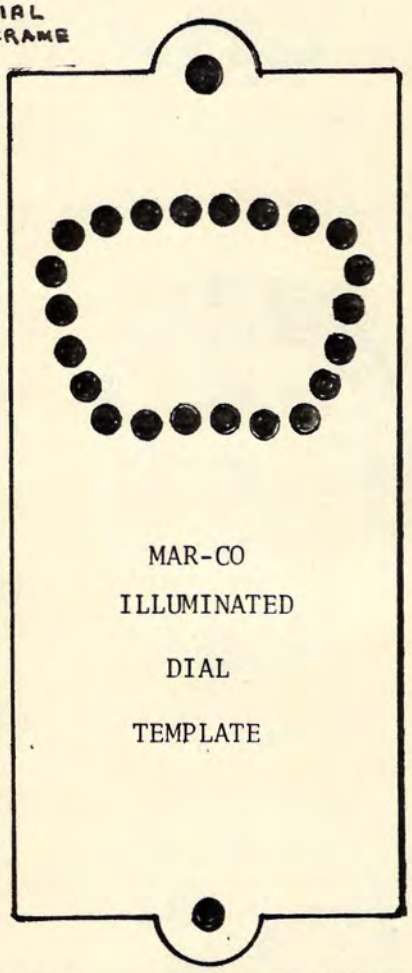


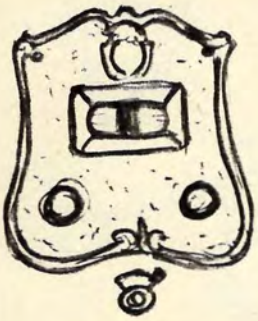
MAR-CO ILLUMINATED DIAL

(Installation Details)

The Martin-Copeland Company were the first to produce an illuminated dial; original configuration shown above.

The outline of the drilling template supplied with each dial assembly has been drawn full-scale. Such original templates are rather scarce, but this one may be copied exactly.



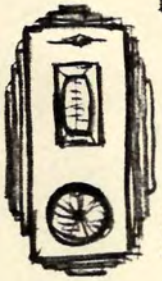


PILOT

ALDEN

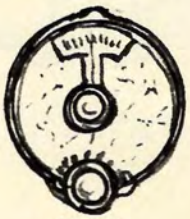
LOUGHMAN

MAR-CO ('28)



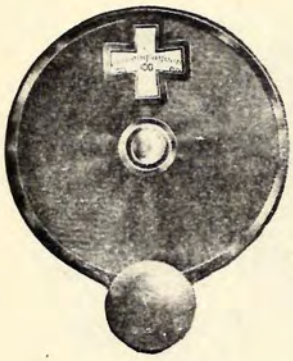
NATIONAL COLOUR DIAL

TYPE "E"

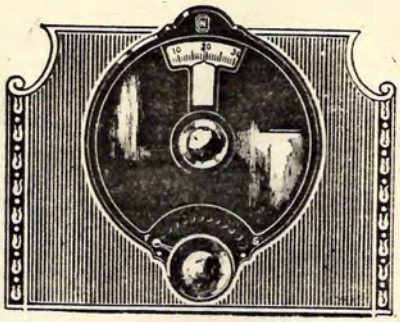


1928

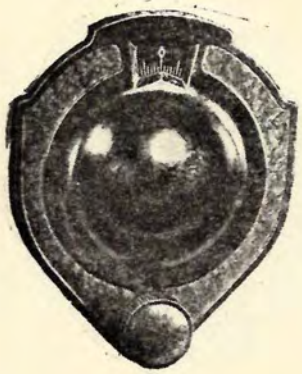
DIAL CONFIGURATIONS MID-TWENTIES



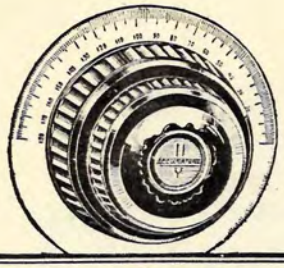
CROSS



NATIONAL

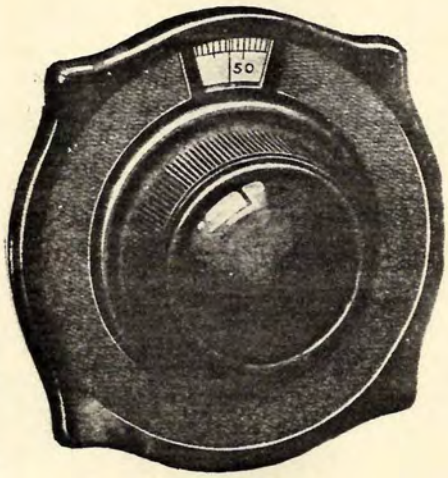


KURZ-KASCH



Geared 80 to 1

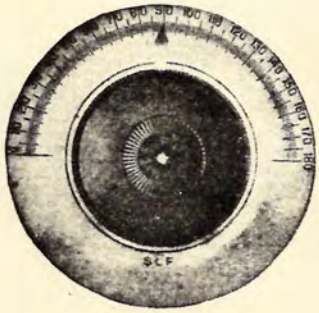
ACCURATUNE



BELL

PILOT

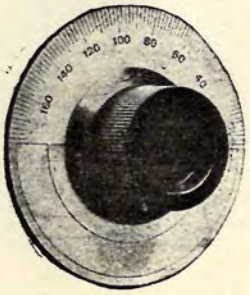
RADIALL



WALBERT

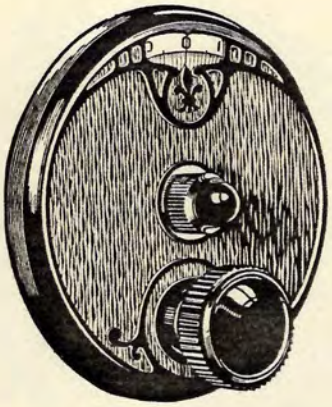
EARLY DIAL CONFIGURATIONS

APEX
(Enamelled Brass)
(1926-$2)

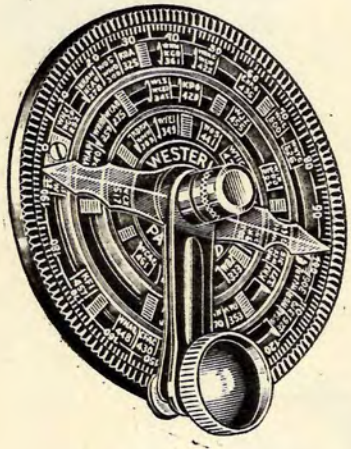


SOMERVILLE
(1919-$1.75)

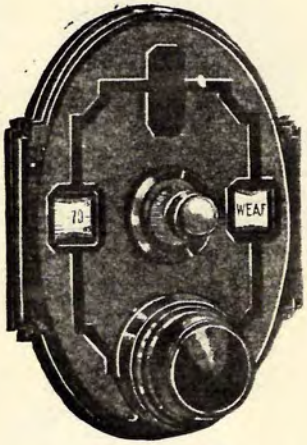
BRUNO
(1926-$2.50)



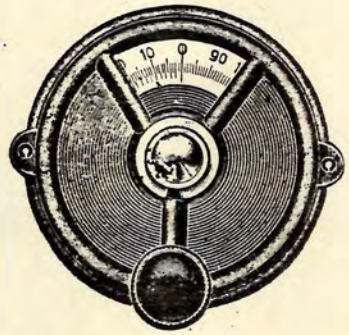
EBY
(1926-$2.50)



WESTERLAND
(1926-$ 2.50)



"ACCURATUNE"
MYDAR RADIO
(1926-$2.75)



A. FULLGARBE, GmbH,
Berlin-1929

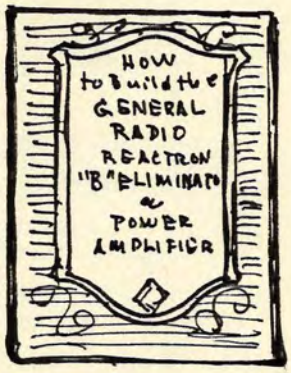
COVER DESIGNS; MANUFACTURERS' LITERATURE

(1923) (54p. Free)

(RADIO, 1926, 5¢)

S-M "The Portable Super-Heterodyne"
(1924, .50)

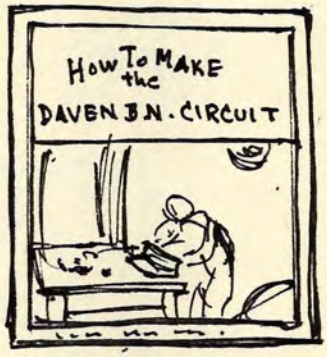
(1923 - 25p., Free)



(G.R., 1924, Free)

"ULTRADYNE"
(32p., 1924 - 50¢)
R.E. LACAULT

(1923 - Free)

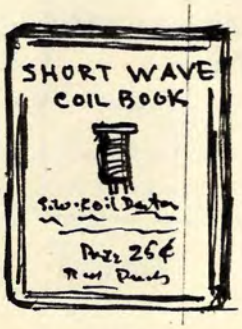


DAVEN BASS-NOTE
CIRCUIT - 1926, 50¢

(Written by Coekaday)
(1933)

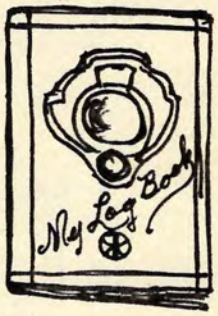
COVER DESIGNS; MANUFACTURERS' LITERATURE

ALL-AMERICAN
(1927, 48 p., 10¢)

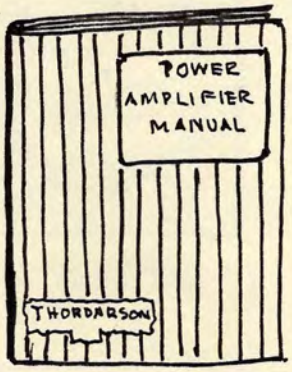


KURZ-KASCH
Log Book
(1926 - Free)

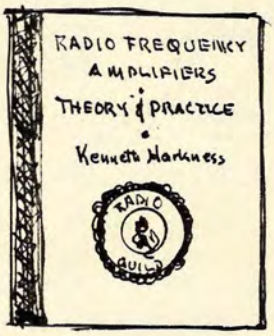
TELMANCO RADIO
GUIDE BOOK
20 CIRCUITS
('24 - .10)

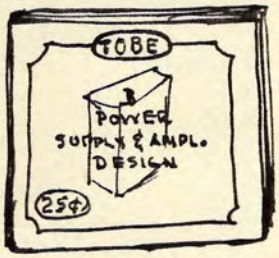


WAVELAND RADIO
Loose-Leaf,
Embossed Cover
'22 (Free)

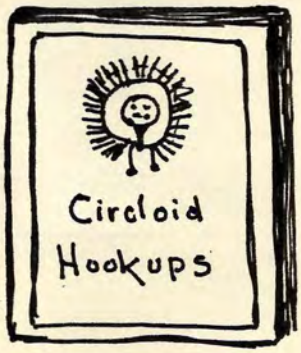


THORDARSON
('28 - .25)





(1927 - .25)



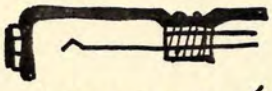
ERLA, 1925, Free

PHONE & SPEAKER JACK CONFIGURATIONS

FROST 133

CARTER 101
KING R-371
YAXLEY No.1

FROST 183
PACENT 61
FIRCO 202-J



FROST 233 (O/C)

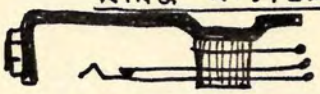
There were dozens of jacks of identical construction & function by various manufacturers, of trivial differences; all were equal to each other; none were patentable after 1925.

YAXLEY No2

YAXLEY No. 2A

FROST 134 (C C/C)
KING R-372A

CARTER "IMP" .18



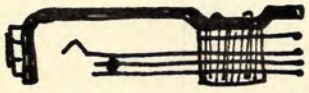
FROST 234 (C/C)
FROST 134 (C/C)
FIRCO 209-J

FIRCO 200-J

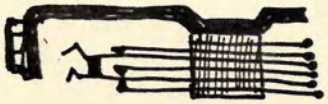
YAXLEY No.4

CARTER 103

FROST 131 (DBLE.)
PACENT 63



FROST 235 (FIL)

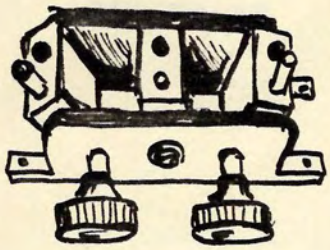


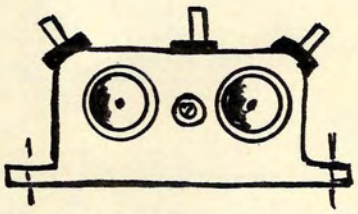
FROST 236 (FIL.)
YAXLEY No.6

CARTER 107
KING R-377
YAXLEY No.7

FROST 124 (Hazeltine)

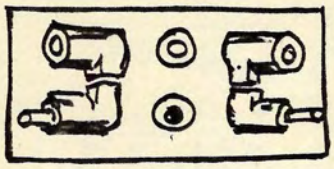
HONEYCOMB COIL MOUNTING NOTATIONS





3-COIL MNTNG. FOR HONEYCOMBS

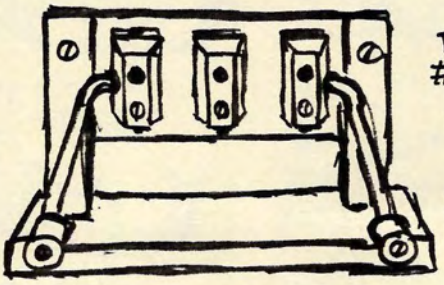
J.M.Paquin, 1922 #5



3-COIL MOUNT
w/ HANDLES
T.S.Co., 1922, 5

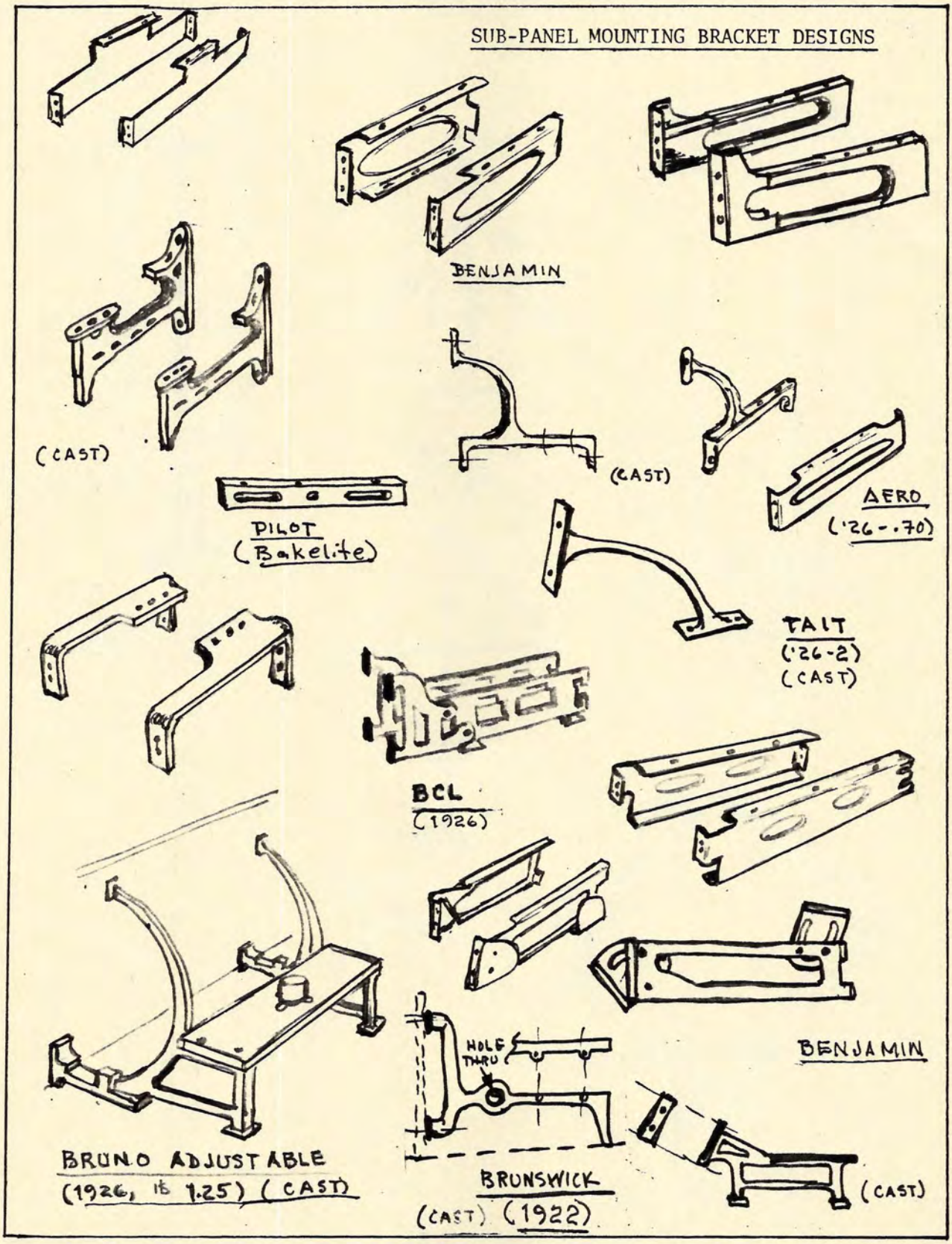
FOR HONEYCOMB COILS

COILS AVAILABLE IN 1922 TO COVER
128 to 23,800 METERS, USING
100 MF VARIABLE.

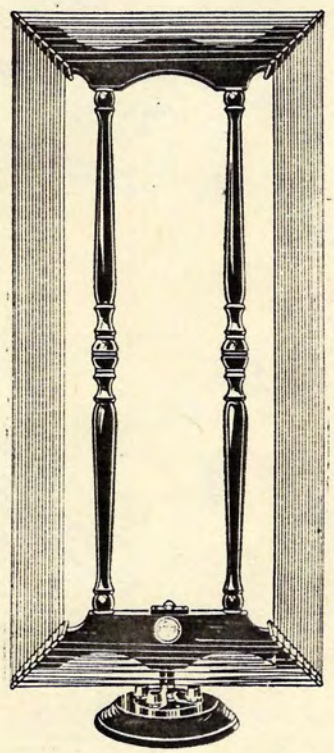


REMLER
#400 Mounts
BAKELITE
PNL. & BASE
('22-#8)

TYPICAL
COIL
Remler,
Giblin,
Coto,
etc.


SUB-PANEL MOUNTING BRACKET DESIGNS
BENJAMIN
(CAST)
(CAST)
AERO
('26-'70)
PILOT
(Bakelite)
TAIT
('26-2)
(CAST)
BCL
(1926)
BENJAMIN
HOLE THRU
BRUNO ADJUSTABLE
(1926, IS 1.25) (CAST)
BRUNSWICK
(CAST) (1922)
(CAST)

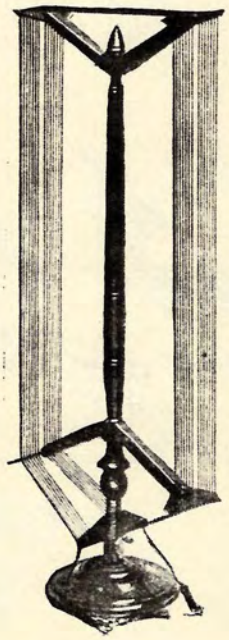
EARLY LOOP CONFIGURATIONS



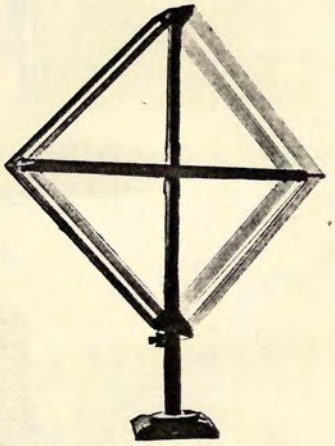
BODINE "DeLuxe"
(1927-$12)

Partly Closed

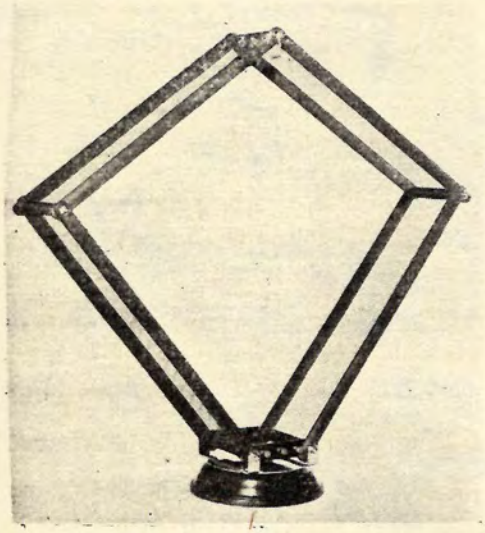
AMPLIFAX
(1919-$10)



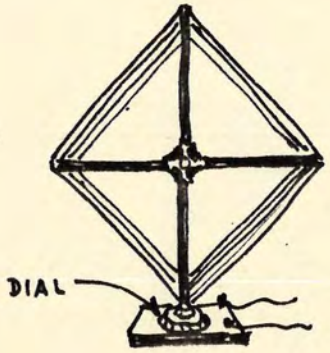
DURO-METAL
(1927-$12.50)



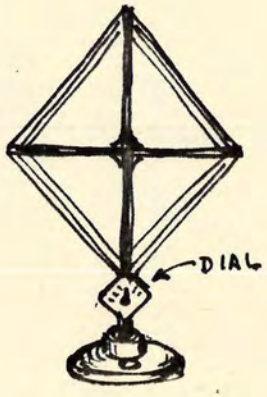
"DUO-LATERAL"
RADIO UNITS
(1924-$7.50)



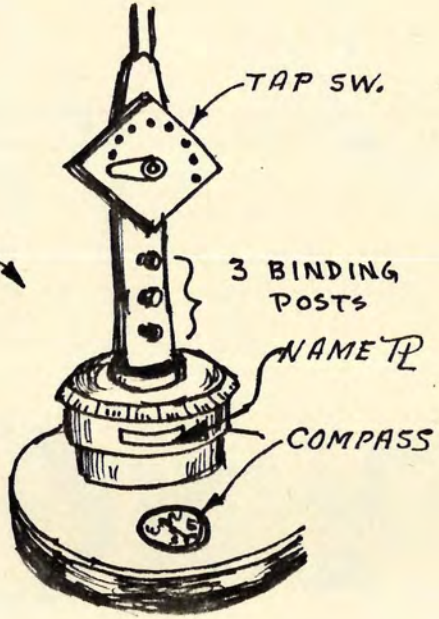
AALCO
(1927-$5)



"Duo-Spiral"
RADIO UNITS
('24-$8)

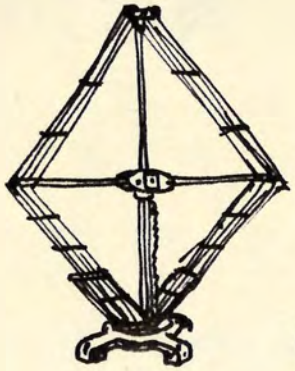


KORACH RADIO
('26-$13)



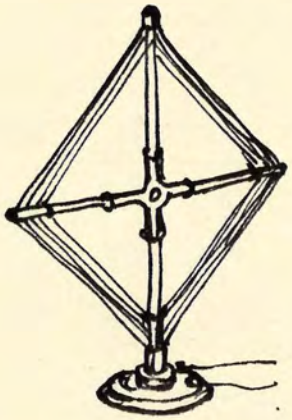
LOOP CONFIGURATIONS

In terms of aesthetic appeal, as well as efficiency, it would have to be stated that the best loops were those produced by BODINE, FIAT, and VEE-DEE.



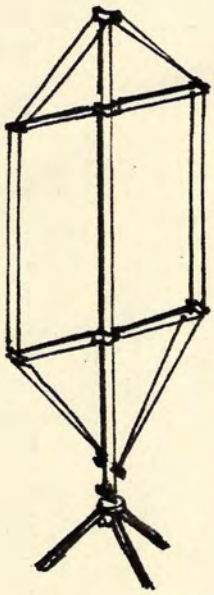
20-Strand Litz Wire
2 or 3 Taps
42" High
Collapsable
(Collapsible)

D.T.W. (Germany)
Imported by TOBE.
('25-$25)



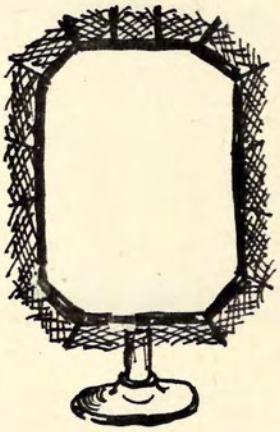
BODINE Basket-Weave: Also Was Available For Inverse Duplex For $2 More.
('24-$8)

LOOP CONFIGURATIONS

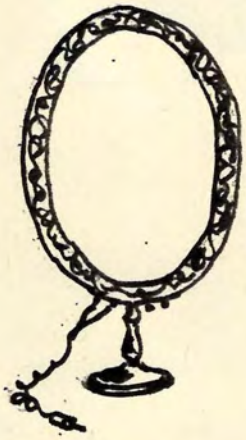


DUNHAM Collapsible
$11) ('25-$11)

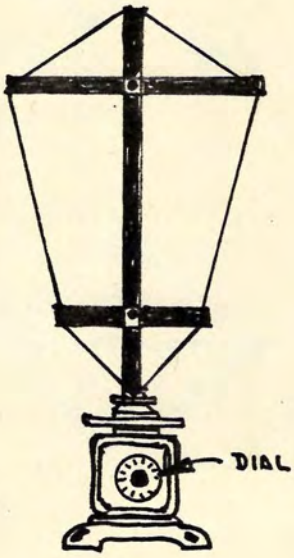
"Variloop" PALMER
('27-$15)



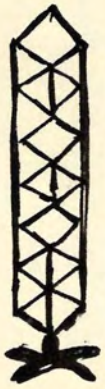
LINCOLN "Zig-Zag"
(1927)



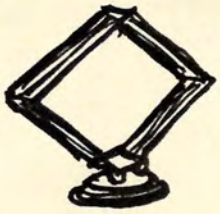
CARTER "Imp"



"Loop Tuner"
NASSAU RADIO
('23-$35)

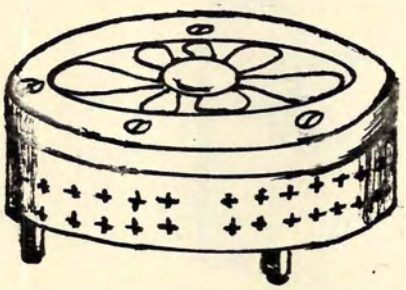


"Volumax"
SCOTT & FITZER
(1925)

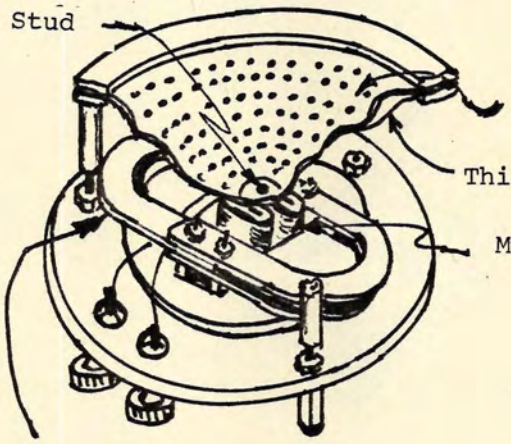


AALCO
Collapsible
('27-$5)

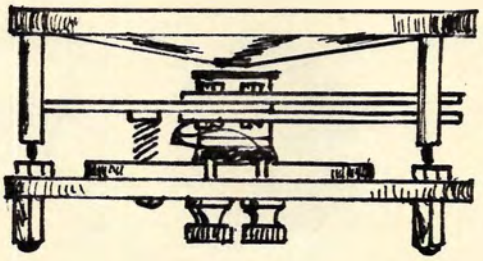
THE DR. GEO. SEIBT SPEAKER, 1926
(German)



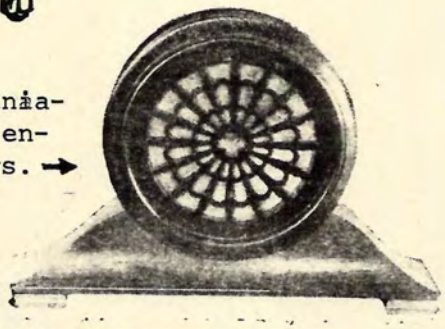
Highly Polished Nickel, 6"Ø



Cotton Placed Under Cone,
Inbetween Posts (not shown)

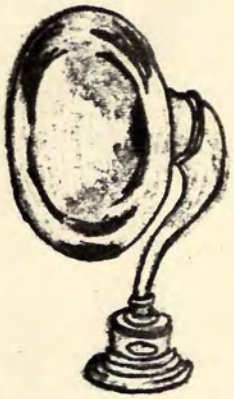


Was also available in a miniature mantle-type speaker, encased in mahogany & veneers. →



(RN-12.26)

SPEAKER CONFIGURATIONS

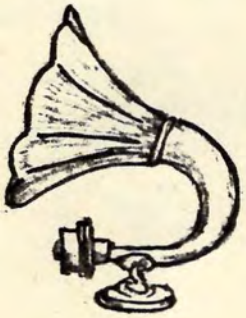


THOMPSON

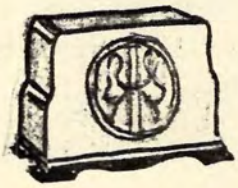
ABOX WALL SPKR.
CORNER INSTALLATION
(1928)

"ORCHESTRATION"

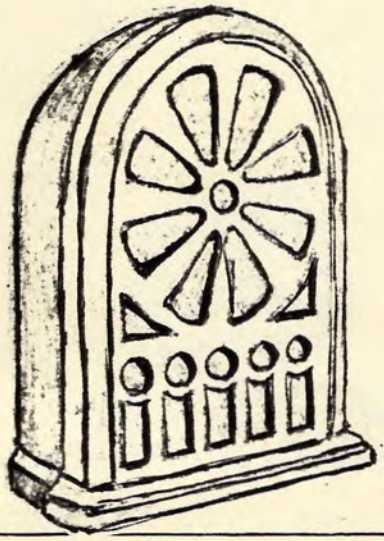
ROLA



AMPLION
"Dragon"

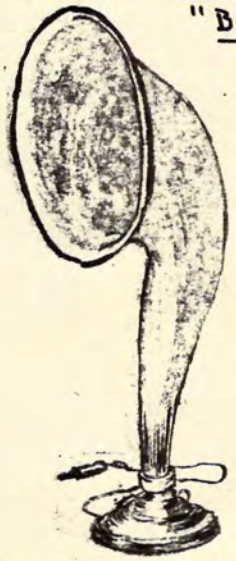


MAGNAVOX
"Beverley"



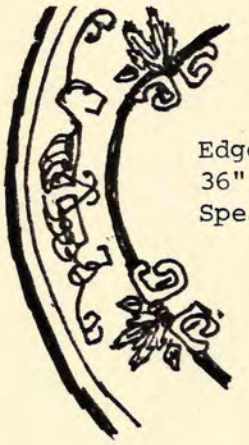
ALL-AMERICAN
REPRODUCER

RADIOLA 103

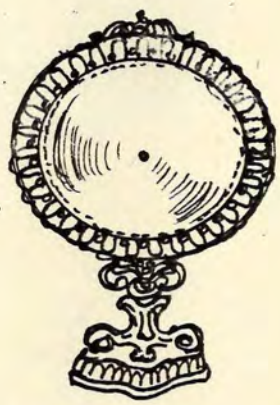


RCA UZ-1325

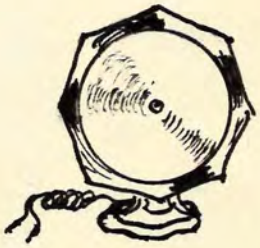
SPEAKER CONFIGURATIONS



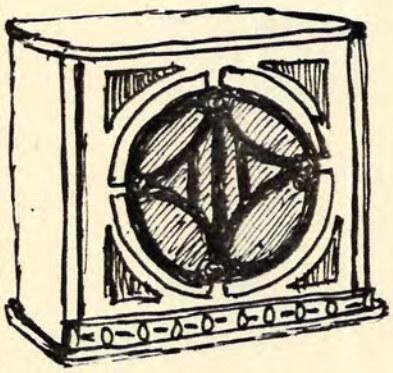
Edge Detail
36" Ø Wall
Speaker



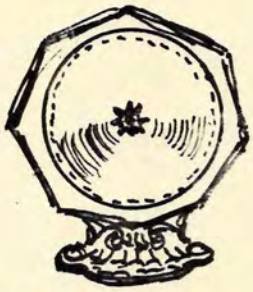
SPLITDORFF Cone
('27-$35)



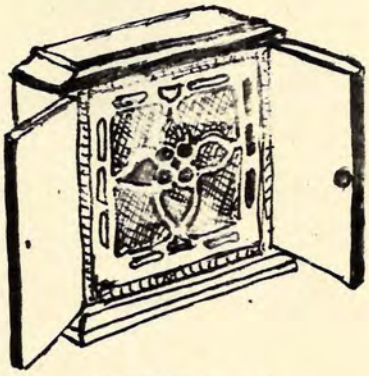
TOWER
"Meistersinger"
Model 28 (Ø8)



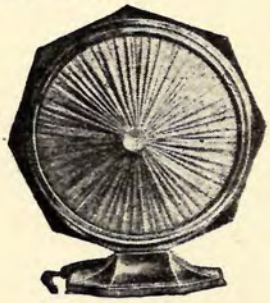
TEMPLE Model 65
('28-$65)



TOWER
"Meister-
Singer"
('27-$15)



OTTAWA Cone
12"x11"x8"
(1927)



"SONOCORDE"
Boudette Mfg.
('26-$25)

PACENT Cone
8.5" Ø
('28-$8)

HEINEMANN Cone
"Sensory"
8.5" Ø
('28-$8)

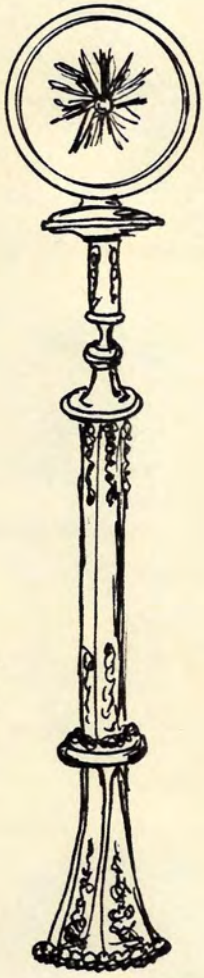
SPEAKER CONFIGURATIONS

(1925)

MAGNAVOX's FIRST "Beverly" Dynamic, 1924

BALDWIN

SHIELD SPKR. '28
Shield is the cone diaphragm, of new composition material. Finished in blue & polychrome; weighted C.I. base.

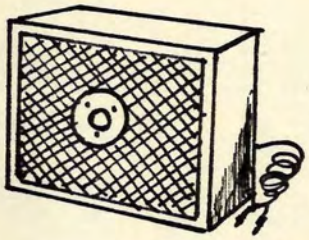


SALON SPKR.
(1922 French)

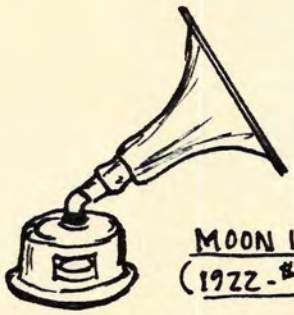
(1928)

SPEAKER CONFIGURATIONS

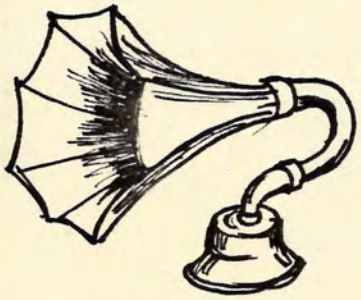
"RICO" L.S. PHONE
(1922 - $4.50)
Radio Industries Corp.



TIMMONS TALKER
(1922 - $35)

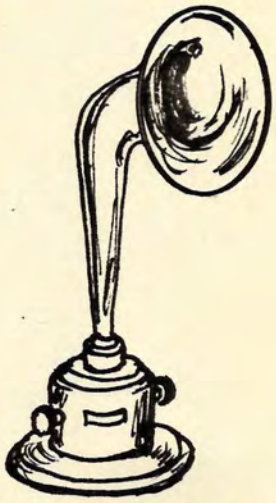


MOON L.S.
(1922 - $7.50)
(Alum., Iron, Maple)

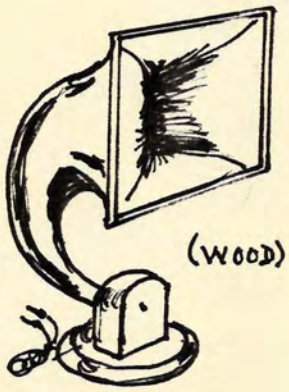


"GEM STANDARD"
Rubberoid
(1922 - $7.50)

"MICR-O-PHONE"
Cast Aluminum
(1922 - $20)

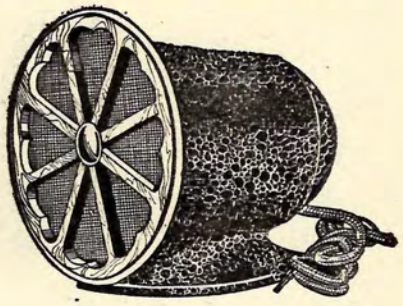


SADLER TRUTONE
(1922 - $6.50)



"CONCERTOLA JR"
WORKRITE
(1922 - $12)

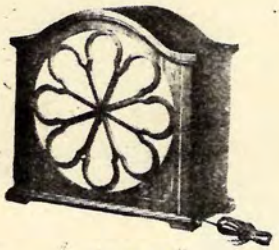
SPEAKER CONFIGURATIONS



FRESHMAN "Master"
(1926 - $10)

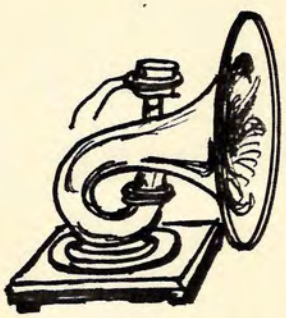
ACME K-1
(1926 - $25)

Maderaware Radio Horn

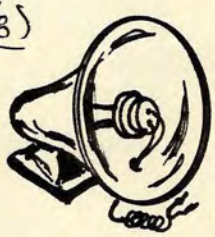


ACME
(1926 - $18)

"THOROPHONE"
Winkler-Rechmann
(Thorola)
(1924 - $45)

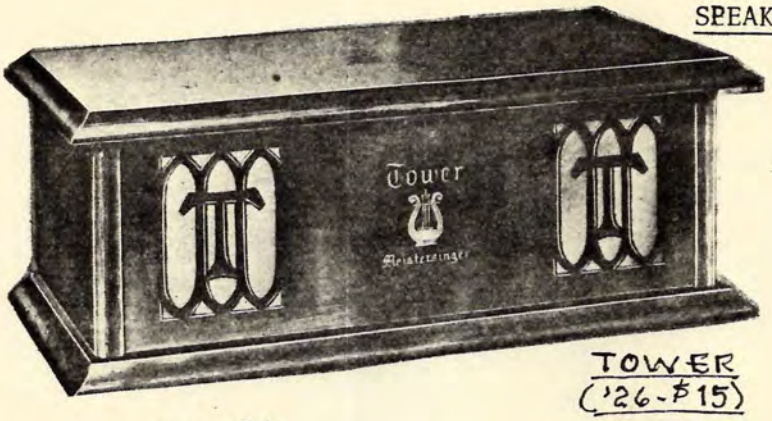


"ACOUSTICOLA"
TRIMM - '24 $35
(Cast Aluminum)

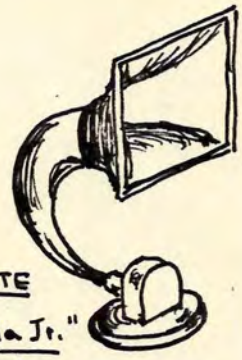


MOZART "Baby-Grand"
(1924 - $12)
(12" Bell; Gold & Black Crackle Finish; Gold-Plated Unit.)

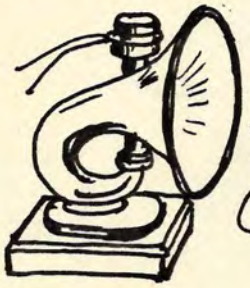
SPEAKER CONFIGURATIONS



TOWER
('26-$15)

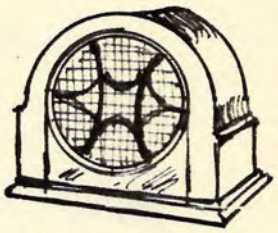


WORKRITE
"Concertola Jr."
('22-12)

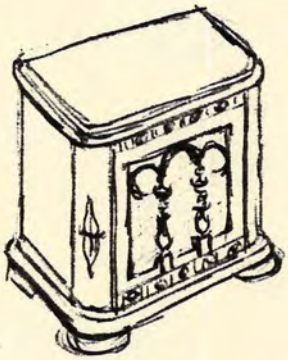


TRIMM
"ACOUSTICOLA GRAND" SPKR.
(Cast Alum.
'24-$23)

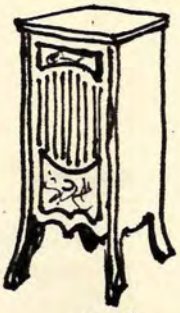
ENGLISH-WHITMAN
18" Diaphragm
('26-$35)



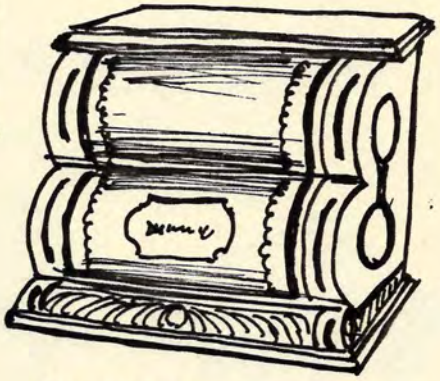
BURNS CONE
(1927-$10)



GV MOTER DYNAMIC SPKR.
(1926)



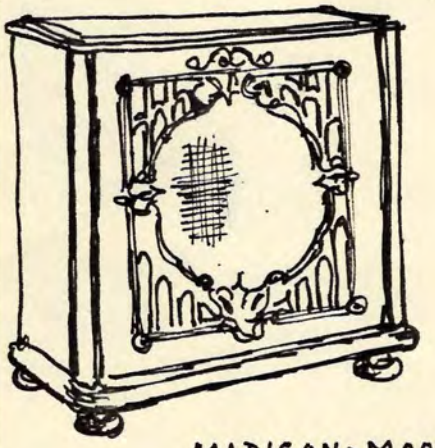
GERMAN
PEDESTAL
29"-('27/$24)



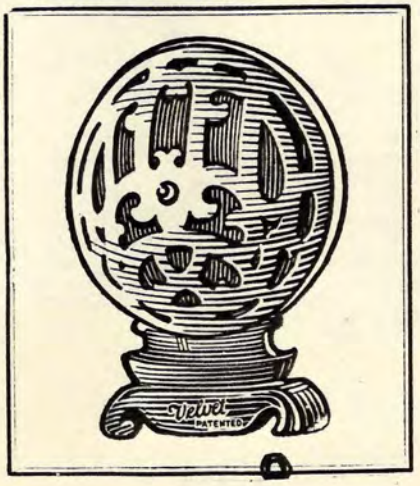
DICTOGRAPH ROLL SPKR.
('26-$25)

UTAH-'27-$19

SPEAKER CONFIGURATIONS



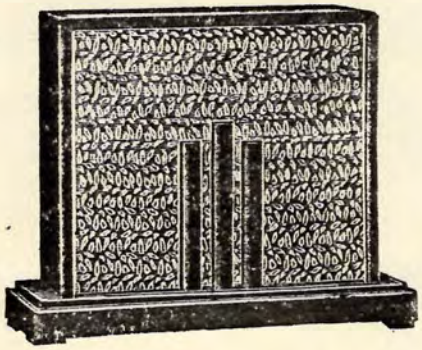
MADISON-MOORE
DYNAMIC SPKR.
(1929)



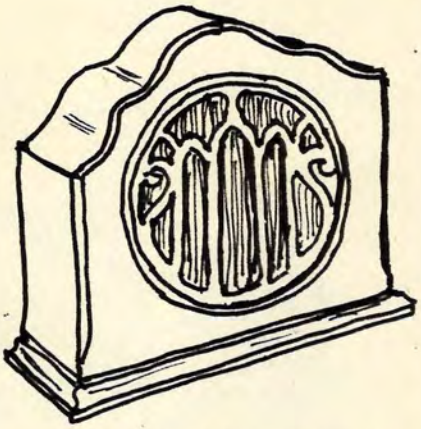
"Chinese Cone-Flex"
('26 & 28)

"Lantern"
('26 & 13)

"VELVET" SPEAKERS



Aktiengesellschaft für
Elektrizitäts Ausführungen
(Design Concept for Spkr. Cabinet)

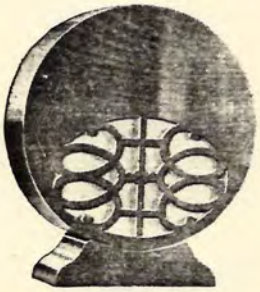


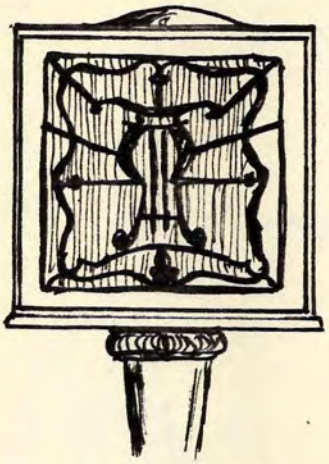
BREMER-TULLY
10"x12" - ('26 & 30)
(PM & DYN.)

"MUSIC-MASTER" XII
('25 & 35)

SPEAKER CONFIGURATIONS

"MUSIC-MASTER"

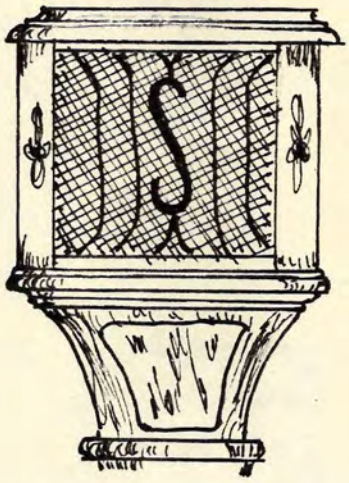




YAHR-LANGE - "TU-TONE" - 40" (1927 - $35)

JENSEN-1926
(Model D-44)
($85)

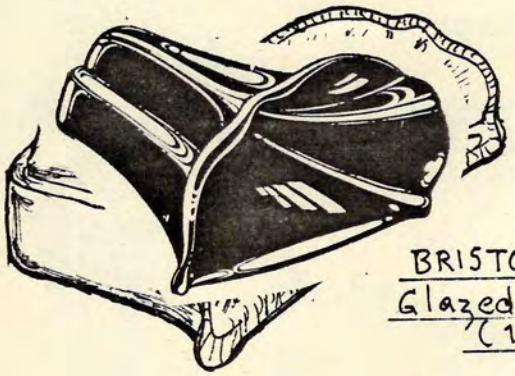
SAAL PEDESTAL
('26-38 ~ 30" H.)



ANSONIA
"GOTHIC"
Guaranty Radio
('30 $5)

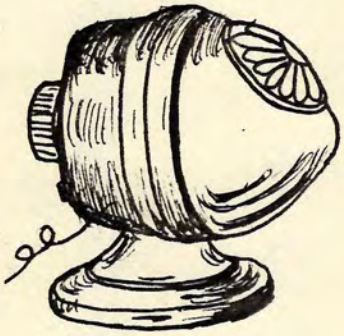
THOR REPRODUCER
('24 $18)

SPEAKER CONFIGURATIONS

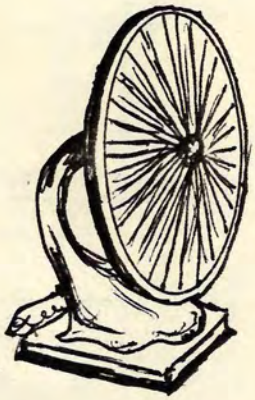


BRISTOL SPKR.
Glazed Pottery
(1924)

B.T.H. C2-1924

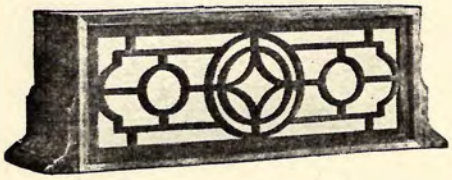


"MAGNORA"
Tortoiseshell
Encased Spkr.
(1923)

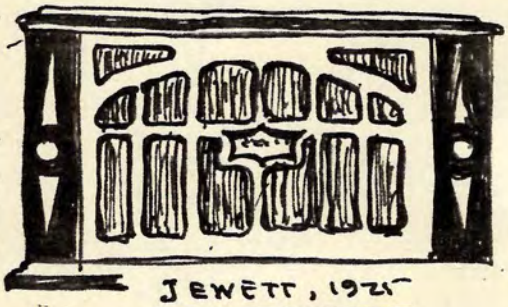


STERLING "PRIMAX"
(1923) Pleated Paper

(~~$~~23) (A)



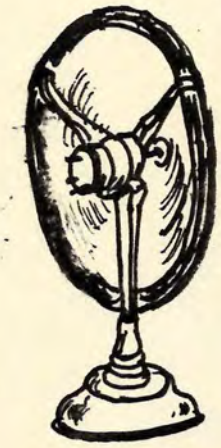
FREED-EISEMANN
(1924)



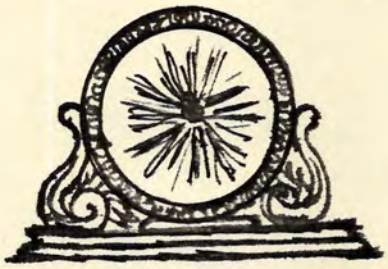
JEWETT, 1921

KODEL "Deluxe"
('25 ~~$~~25)(B)

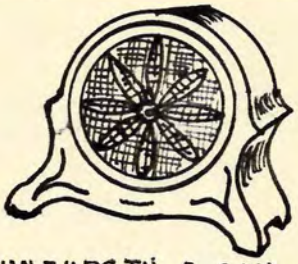
SPEAKER CONFIGURATIONS



PATHÉ L.S.
('24-$19)

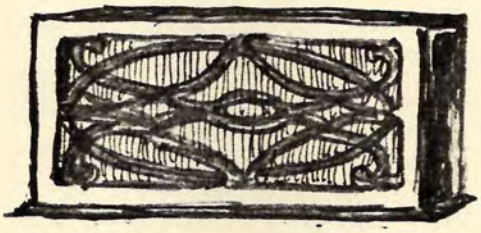


MUSIC-MASTER
Master XII ~
(1925)

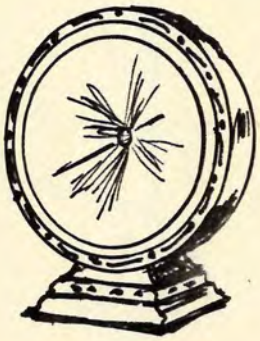


"SUNBURST" 3-COIL
PM SPKR. (GERMAN-1927)

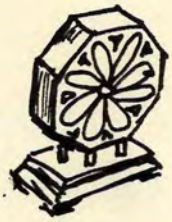
N&K
Type W, 14"ø
('24-$28)
(Cone Material Was "Burtex")
(GERMAN)



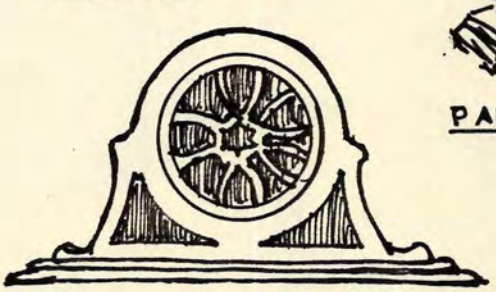
BRISTOL "Audiophone" - 1926



MAGNAVOX "Cornell")
('26-$22.50)



PAUSIN, 1926

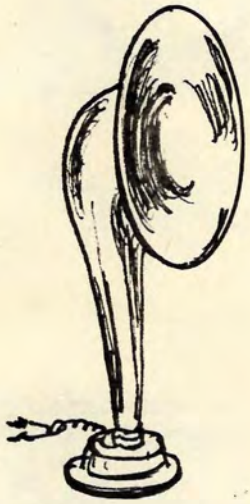


WORKRITE DOUBLE MAGNET SPKR.
('27-$32) Walnut Cabinet

STERLING R-2 SPKR.
('28-$25)

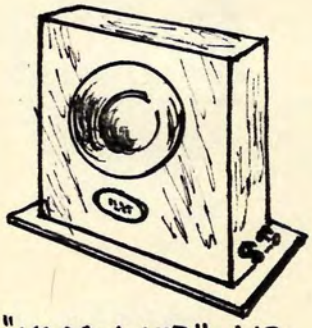
SPEAKER CONFIGURATIONS

THOR "TORCHIERE" SPKR. 1925-$50 (F.O.B. San Francisco)

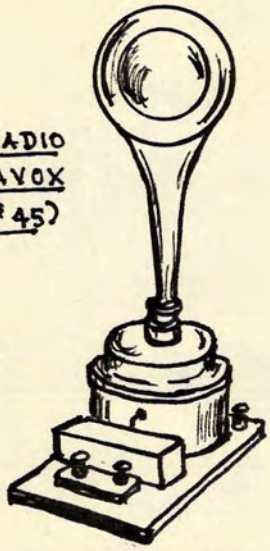


GOTTSCHALK (1923-$23)

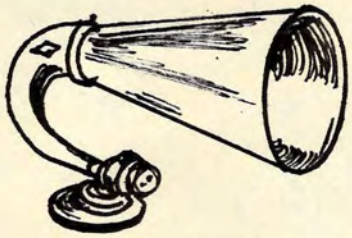
"AUDIOPHONE" 1923-$32 (BRISTOL Co.)



"VOCA-LOUD" AIR HORN - 1921-$30 (John Firth Co.)



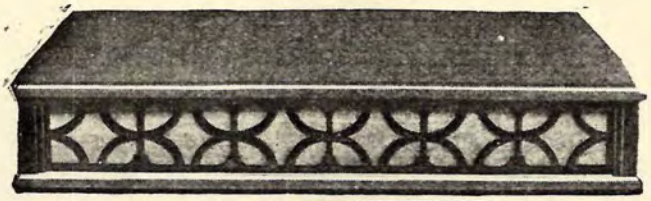
THE RADIO MAGNAVOX (1921-$45)



MURDOCK No 500 LOUD-SPEAKER (1923-$5)

STERLING (1920)

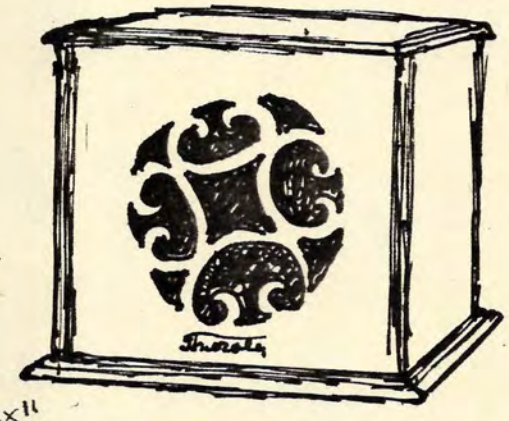
SPEAKER CONFIGURATIONS



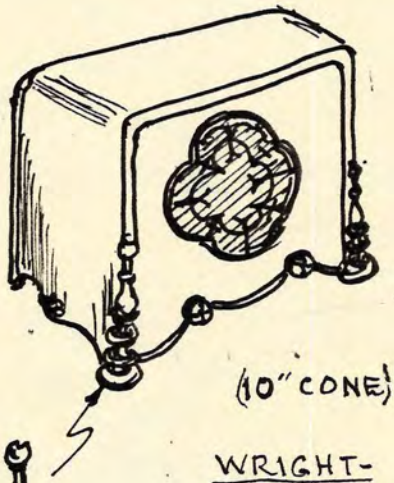
TIMBERTONE

(1926)

UTAX "Super-Flex"
(1926 ~~$18~~)



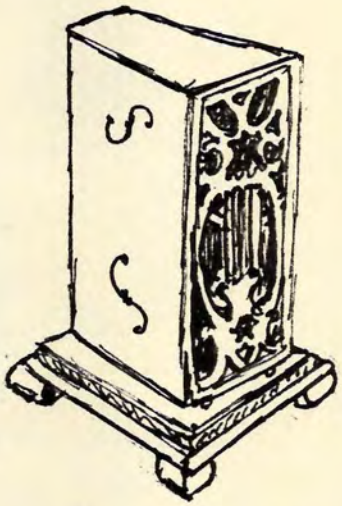
THOROLA DYNAMIC SPKR.
10" Cone; Walnut Cabinet;
15" W x 13¾" H x 8½" D. ('28)



(10" CONE)

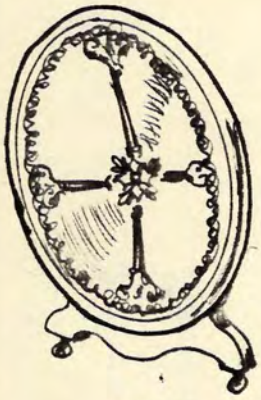
WRIGHT-DeCOSTER
AC-'29-$73
(15½" x 16½" x 13")

TYP. CORNER POST (4 PCS.)



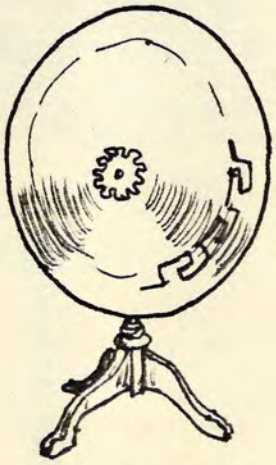
BAUMGART "Natural Tone" SPKR. ('26 $15)

SPEAKER CONFIGURATIONS

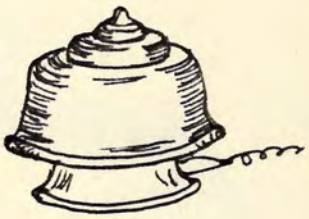


44"H
30.5W
11.5"D

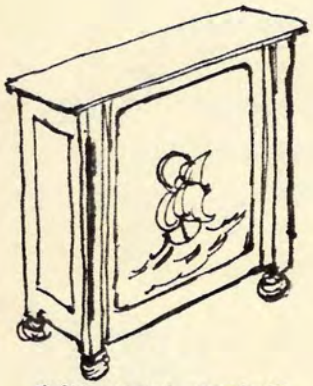
S.P.N
STURRUP-PLIMPTON-NEWELL (1928-$65)



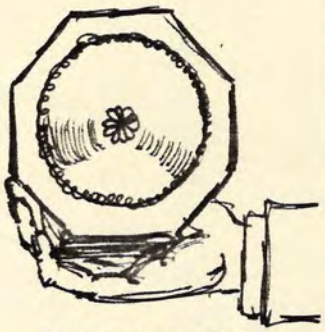
BATHGATE 36"ø
(1927-$12)
(ALSO G.R.P, ENSCO, EMPIRE, A.R.A, PACENT, TRIMM, WHEELAN, PA UTAH, WINDSOR.)



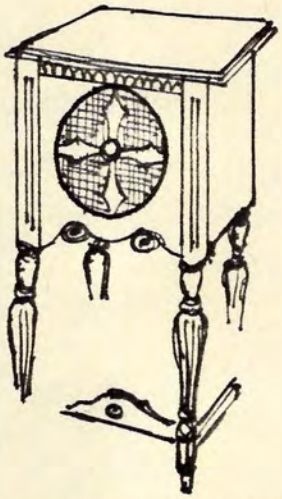
"FILTER SPEAKER" -
(1926-$25) (3CW)



BROWNING-DRAKE
(1928-$38)
Various Scenes Available On Fabric Facing of "Air-Chrome" Spkr.

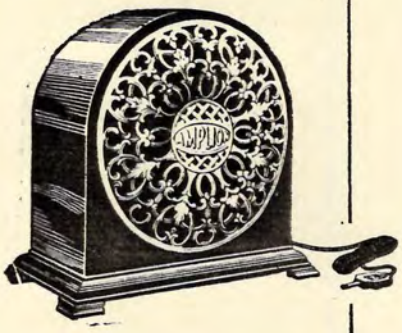


ALDEN - 5041
(1927-$2)



WRIGHT-DECOSTER
TYPEC-DYN.
(1927-$58)

AMPLION R5-1
(1928-$55)



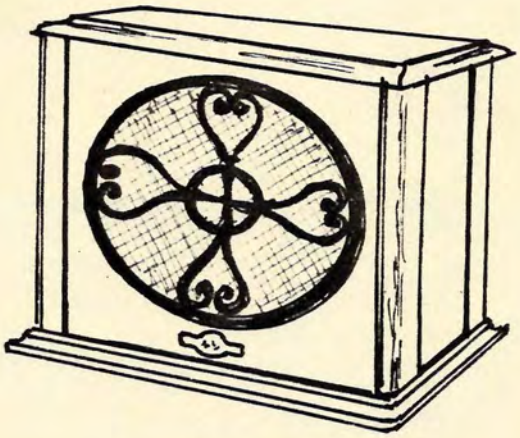
SPEAKER CONFIGURATIONS

"NESPER REFLEX"
Completely Made of Pot-Metal
(1926)

BOSCH AMBO-TONE $27.50

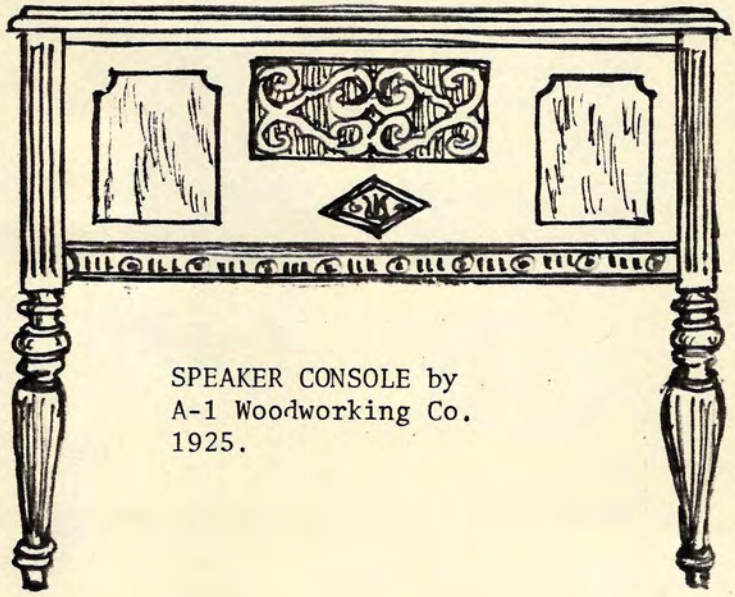
"WALL-ART" SPKR.
(P & G Co. - 1926)

"FABRICONE WALL"
Geo. R. Penn Co.
(1928 - $12)

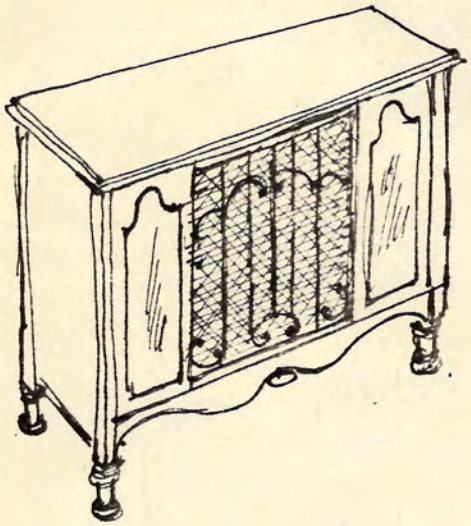


JENSEN DYNAMIC SPKR.
(Magnavox License) 1928, $75

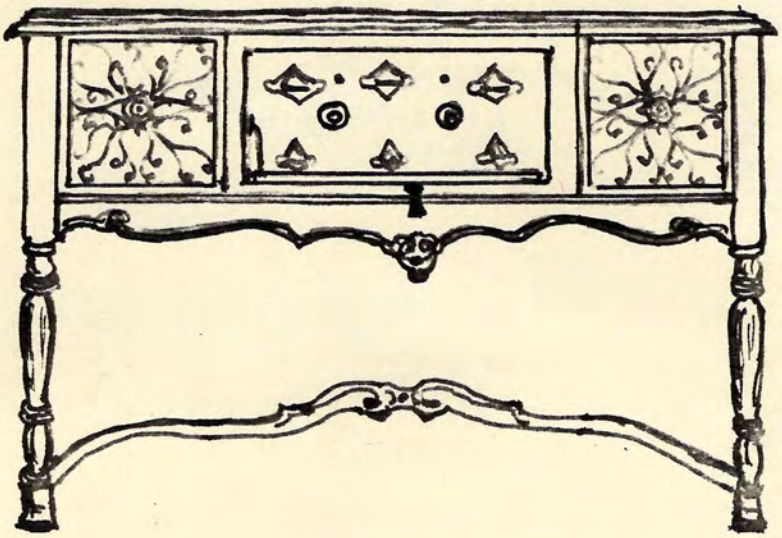
CONSOLE SPEAKER CONFIGURATIONS



SPEAKER CONSOLE by
A-1 Woodworking Co.
1925.

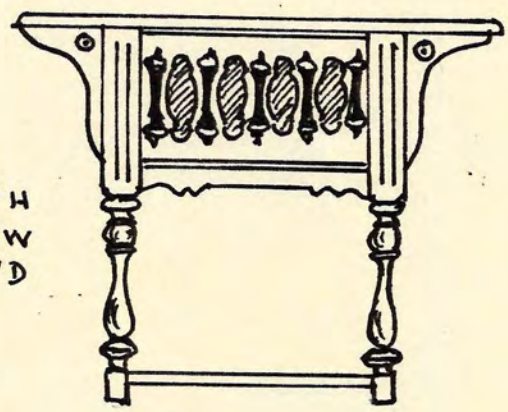


NEWCOMBE-HAWLEY SPEAKER CONSOLE:
1928. (Used by HAgerman.)

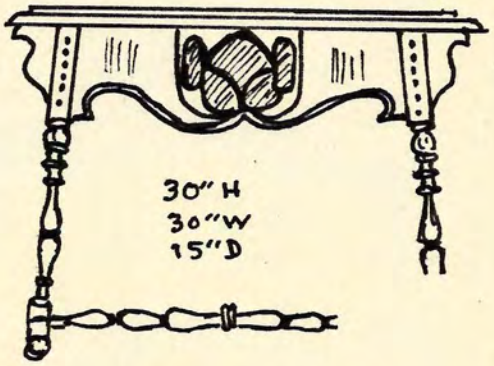


"ORCHESTRATION"
Speaker Console by
Radio Cabinet Co.;
36" x 30"H x 15½"D.
(1925)

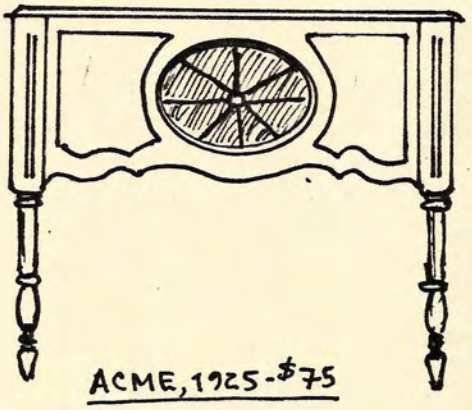
RADIO SPEAKER TABLE CONFIGURATIONS



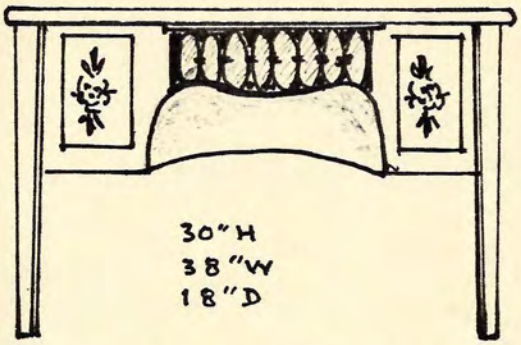
RAMCO #27, 1929 - $70



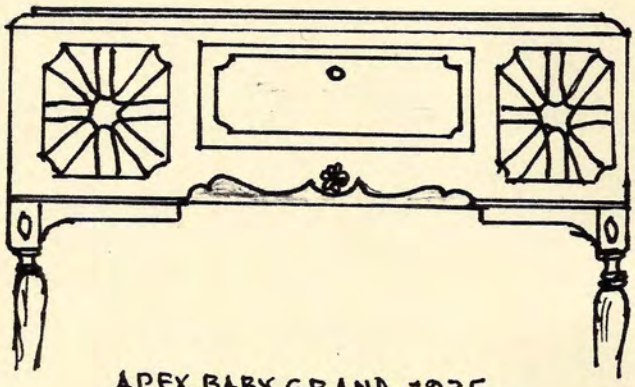
RAMCO #84, 1928 - $33



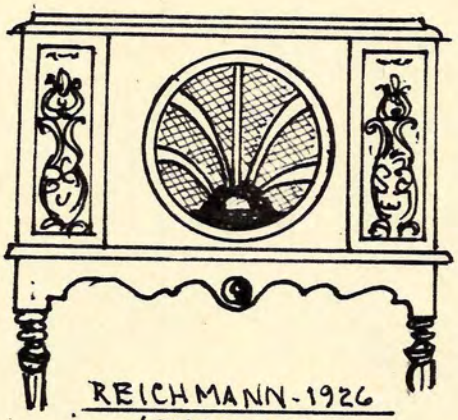
ACME, 1925 - $75



WINDSOR, 1924 - $40
(Model 100)

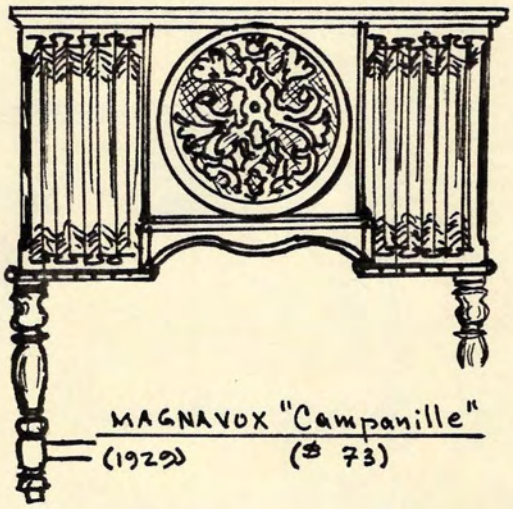


APEX BABY GRAND, 1925



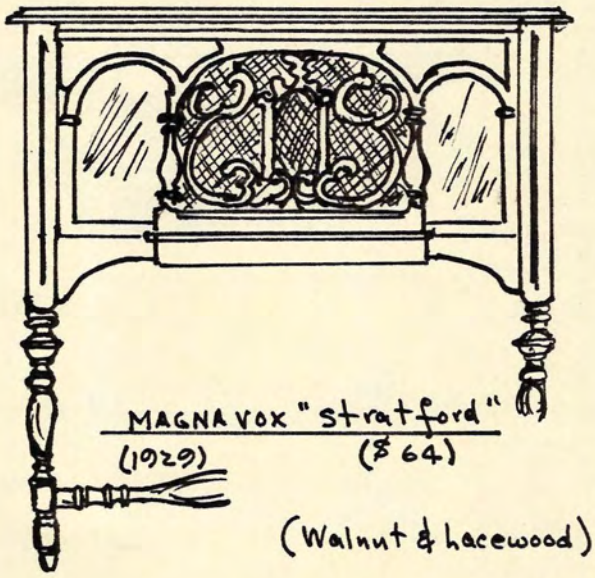
REICHMANN - 1926
(THOROLA)

SPEAKER CONSOLE CONFIGURATIONS



MAGNAVOX "Campanille"
(1929) (# 73)

(RE·7·29)

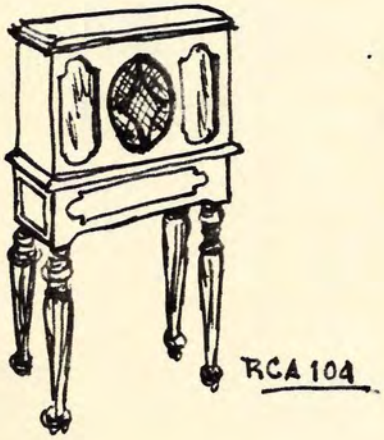


MAGNAVOX "Stratford"
(1929) ($ 64)

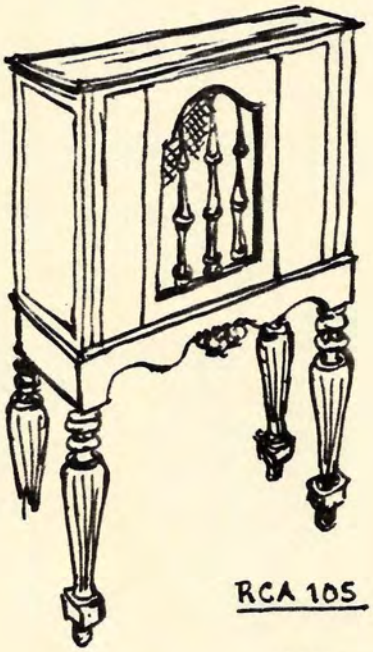
(Walnut & Lacewood)

RCA SPEAKERS MISCELLANIA

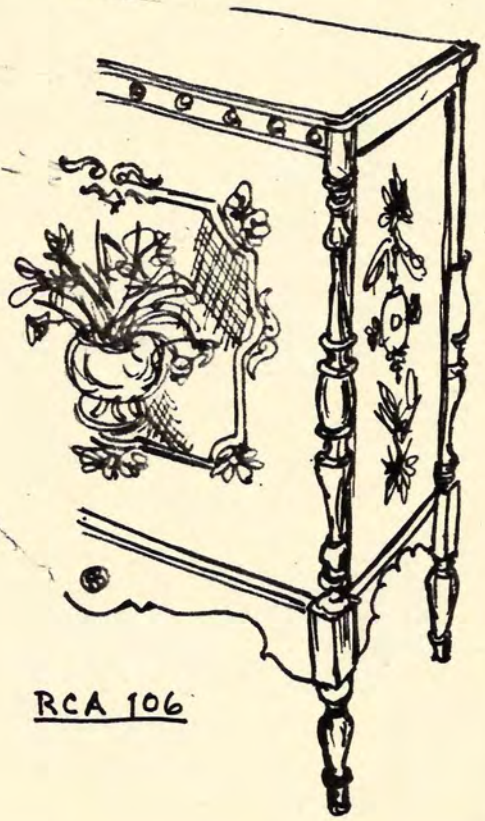
RCA 103



RCA 104

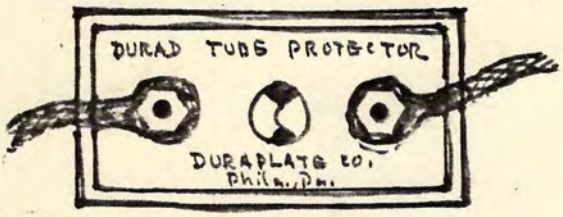


RCA 105

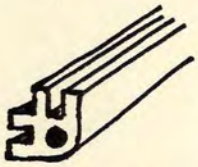


RCA 106

HARDWARE



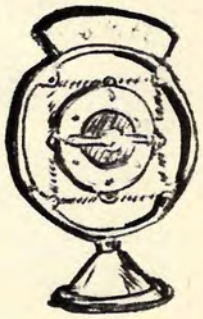
TUBE PROTECTOR
An embedded fusible element in B+ lines.
(1925 - .50)



ALUMINUM CORNER POSTS FOR SHIELD BOXES

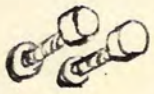
Handle Indicators

RADISCO #3 S.W. LEVER
(1922 - .90)



MIKE

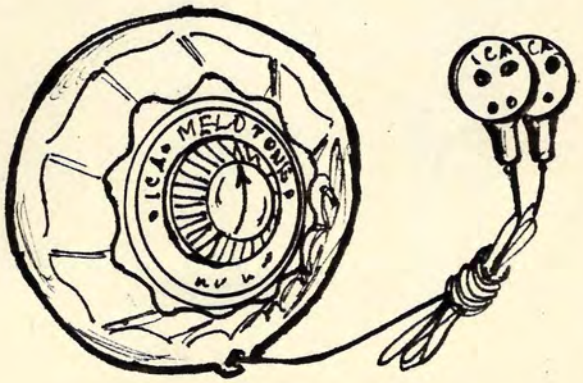
R.U.I. RF UNIT
Combined RF Xfrmr. & Sckt.
(1924 - 4)
(UNITED MFG., CHI.)



LEVER SW. TAPS
(1922 - 35¢ Doz.)

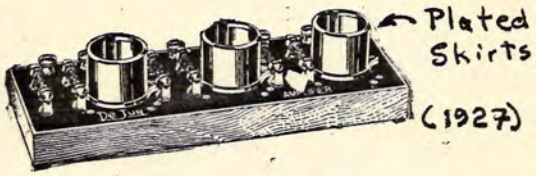
DE LUXE MODEL
AMSCO VERNIER DIALS

SKINDERIKES
XMTNG. BUTTON
(1923 - .95)



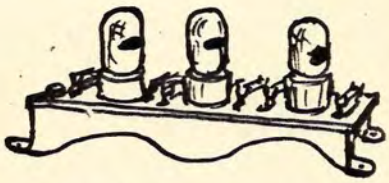
ICA "SELECTONE" - (31 - 2.50)

AUDIO FREQUENCY TRANSFORMERS, EARLY

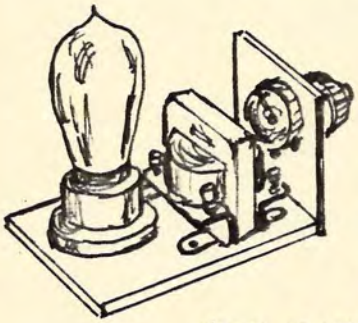


DAVEN
1st & 3rd Configurations.

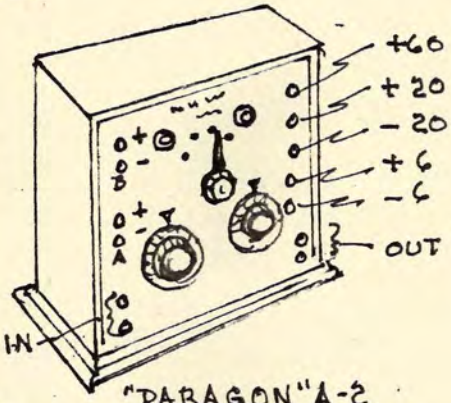
WELTY
DET/AMP UNIT
('26-20)



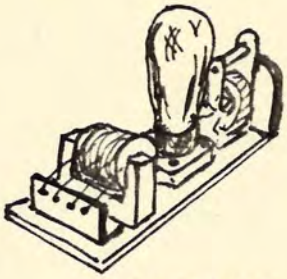
GEN. RADIO Type 7-G
R-C AMP. (1925-11)



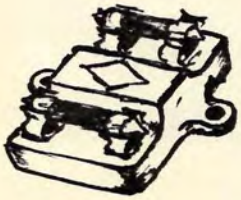
GEN. RAD.
Type 300D Amp. Unit
('23 - 8.25)



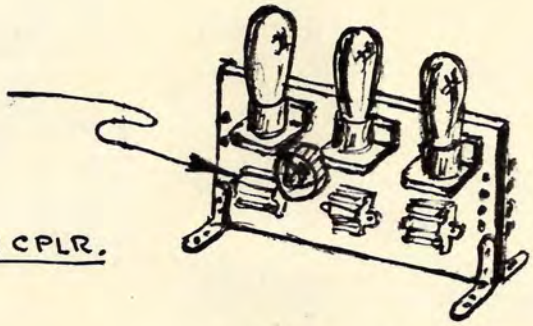
"PARAGON" A-2
(ADAMS-MAYER)
2-STAGE AMP.
('23-40)



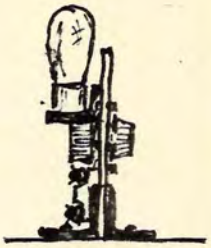
MITCHELL
(SE-AR-DE)
('23-8.10)
ACME or FED
Xfrmrs. Used



AMSCO RESISTOR CPLR.
('27-1.25)

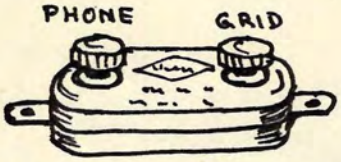


AMSCO R-C AMPLIFIER
('27-9)

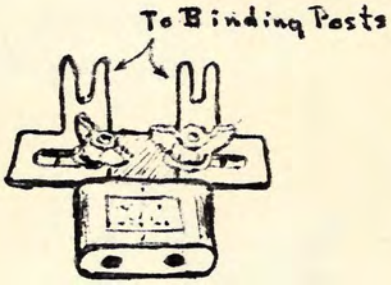


END VIEW

HARDWARE & ACCESSORIES



SPLITDORF PHONE COND.
.00025 ('29 - .50)

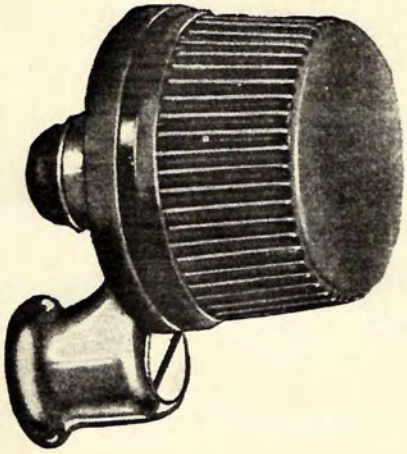


PACENT DUO-JACK
(1922 - 1.50)

THE FLEWELLING VERNIER:

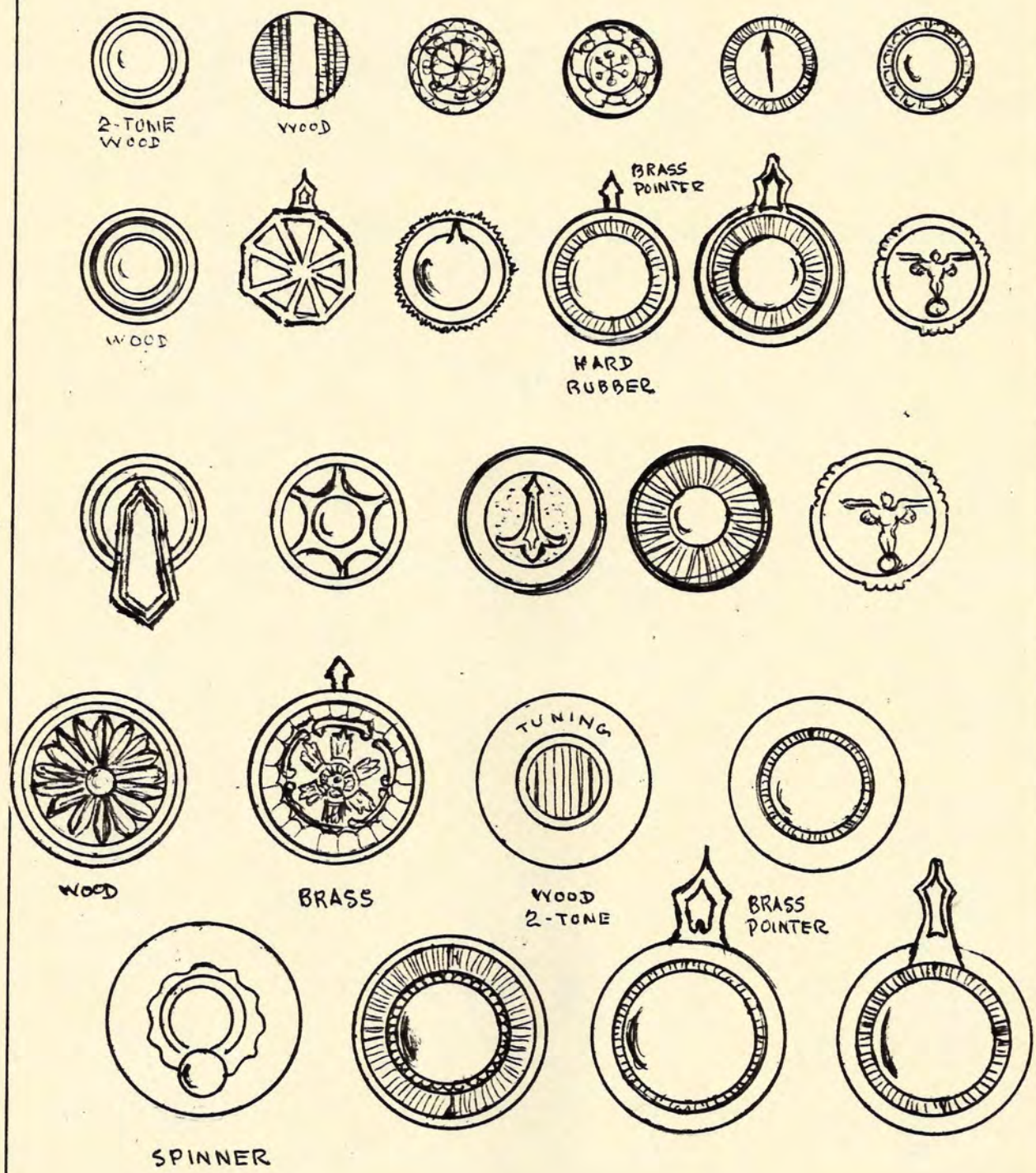
Used w/ a 4" dial; ratio 20:1.
Friction disc drive.

Flewelling's contributions turned mostly on circuitry &, later, test equipment. But he also contributed bits of hardware which were useful, & usually better made than most. He also designed the first continuous capacitor strip, the multiple resistor board, & compact mutual conductance testers.

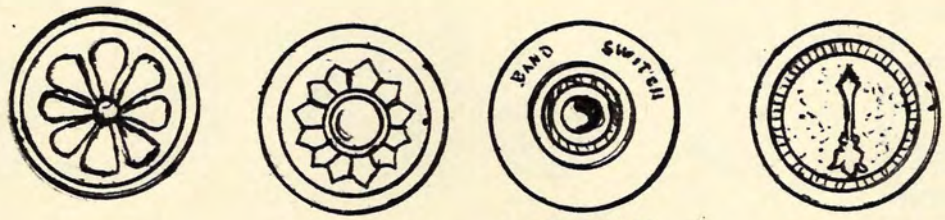


(1925 - 50¢)

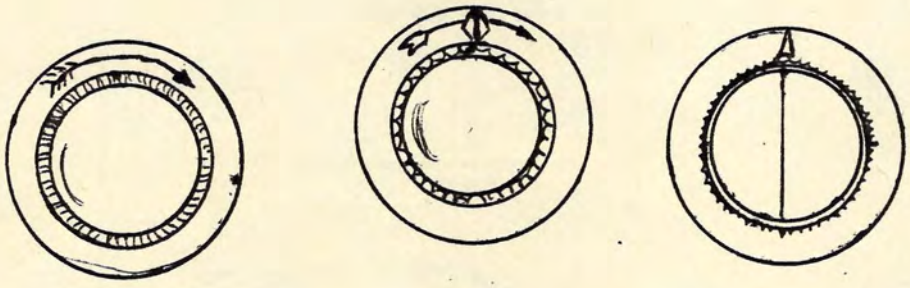
VINTAGE RADIO KNOB CONFIGURATIONS



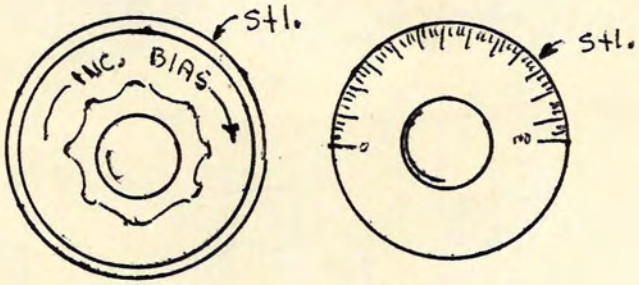
VINTAGE RADIO KNOB CONFIGURATIONS

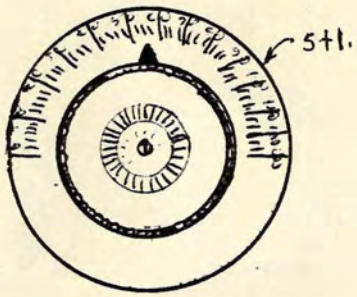


2-TONE WOOD



PROFILES

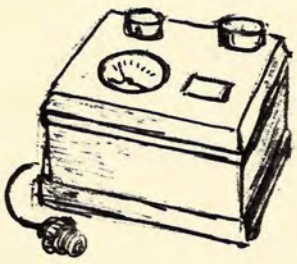




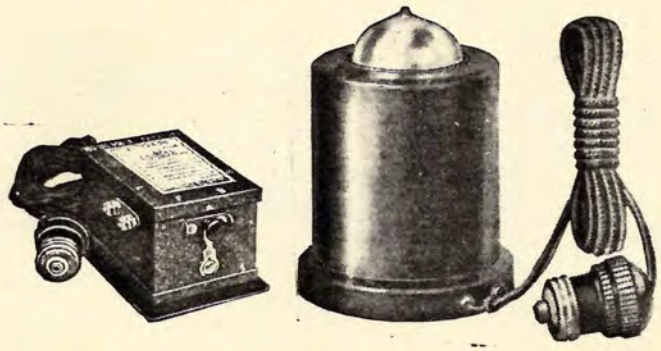
WALBERT "UNIVERNIER"

PROFILES

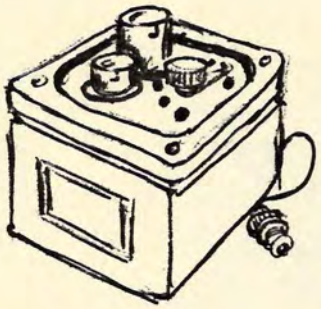
TUBE REJUVENATORS



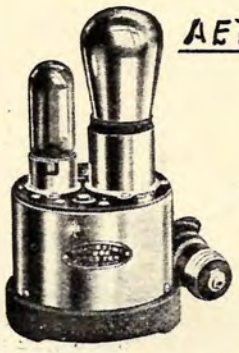
STERLING TUBE REACTIVATOR ('25-12)



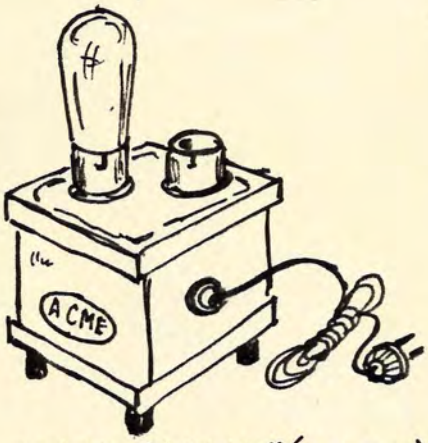
AETNA & JEFFERSON TUBE CHARGERS (1926 - $3.50)



REMO TUBE REACTIVATOR



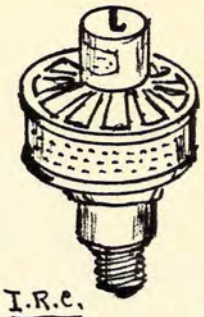
RHAMSTINE (1924 - $5)



MACK "ACME" ('26-3.65)

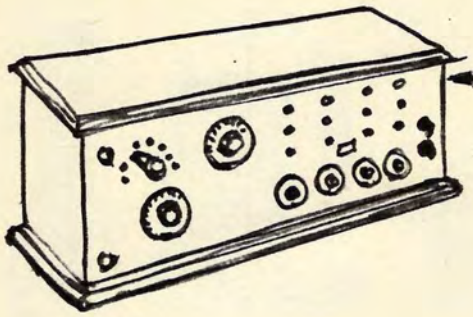
JEFFERSON TUBE REJUVENATOR ('25-8)

('28

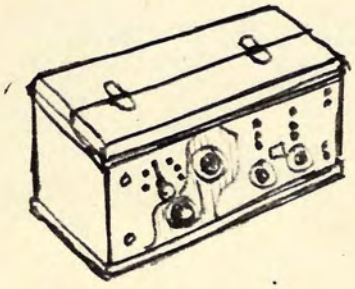


I.R.C. TUBE REVIVER ('26-4.50)

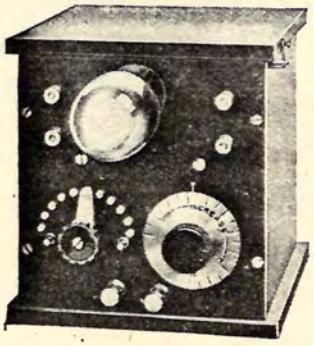
"MIRACO" - MIDWEST RADIO CO. NOTES



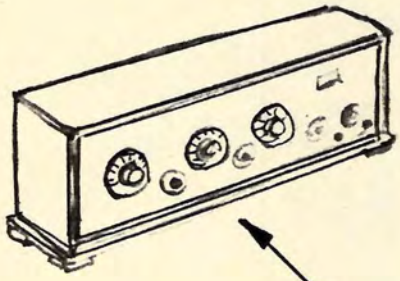
4-Tube TRF. Aluminum shielding inside cabinet - solid mahogany cabinet. The rheostats had multiple windings, allowing one to use either dry-cells or storage battery tubes. 1924 - $54.



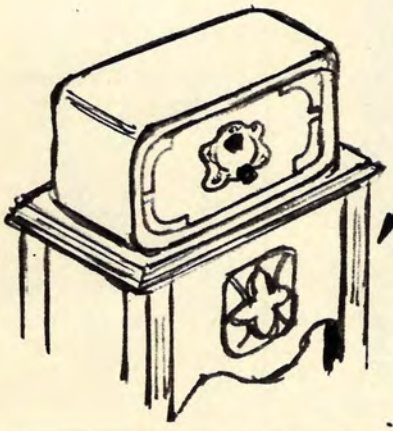
"MIRACO ULTRA 5" - 5-Tube TRF. 1925 - $75.

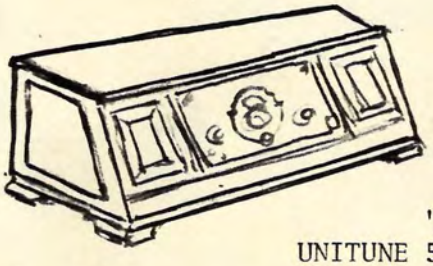


"MIRACO 1-TUBE - 1922, $20.



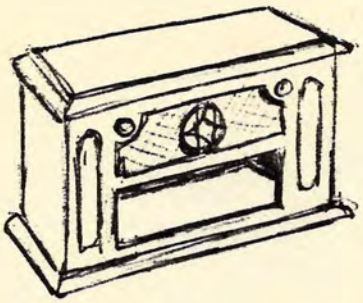
"MIRACO SUPER 8"
Table speaker was optional.
1928 - $50.

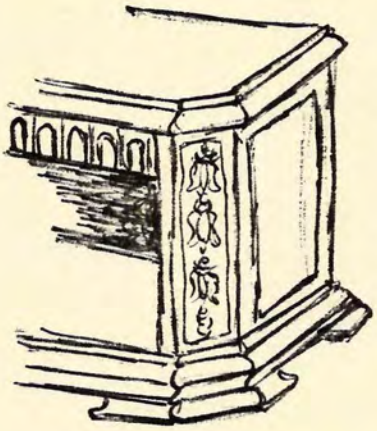




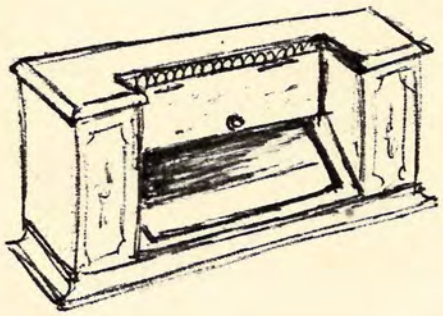
"MIRACO
UNITUNE 5" - '26,$50

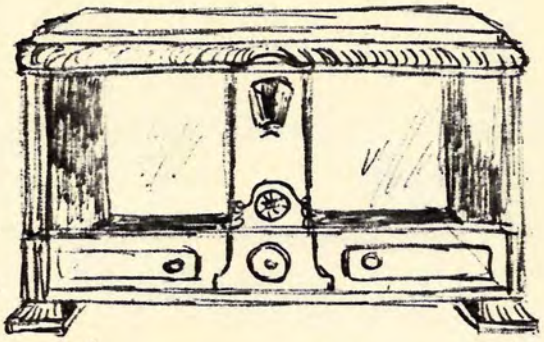
RADIO CABINET CONFIGURATIONS, Sht.1



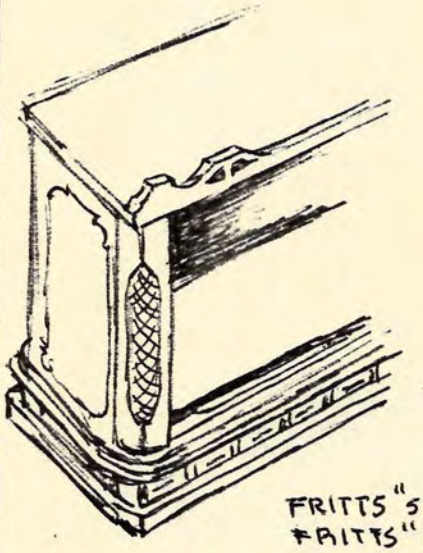


CORBETT TYPE "C"



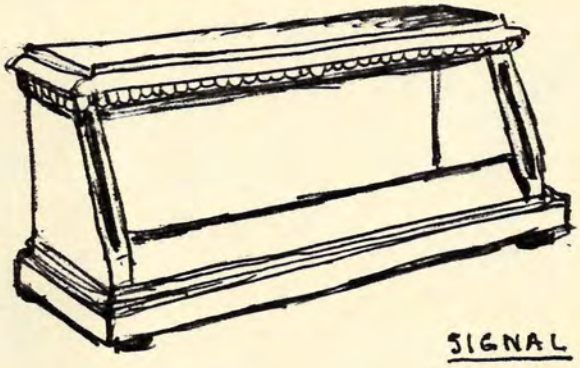


(FRONT PANELS (2) REMOVED)



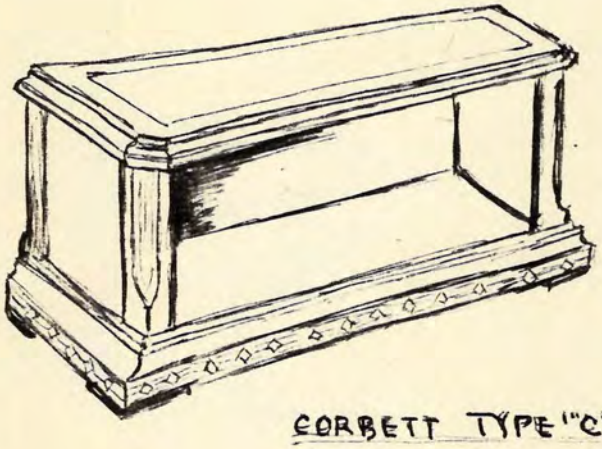
FRITTS "STD."
FRITTS "SUPER"

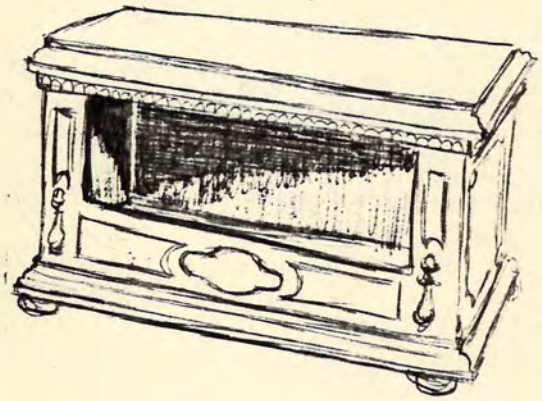
CORNER DETAIL



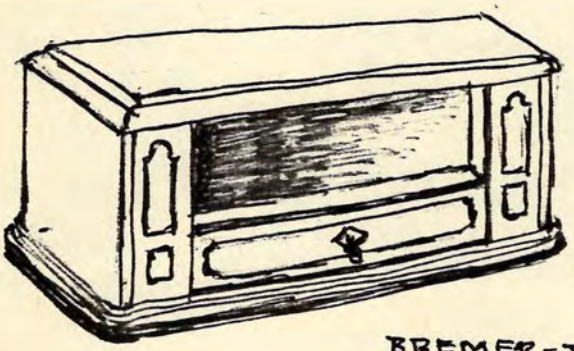
SIGNAL

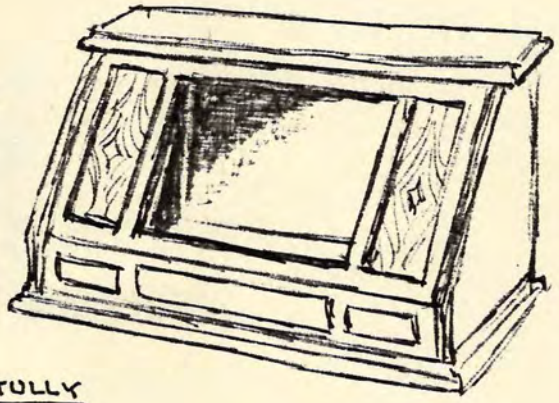
RADIO CABINET IDENTIFICATION, Sht.2



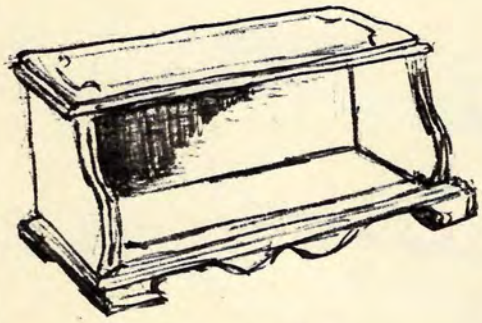


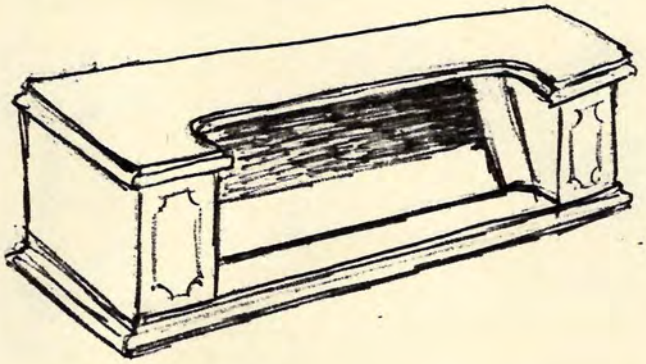
CORBETT TYPE "C"
(Several Versions)
St. Mary's, Penna





BREMER-TULLY

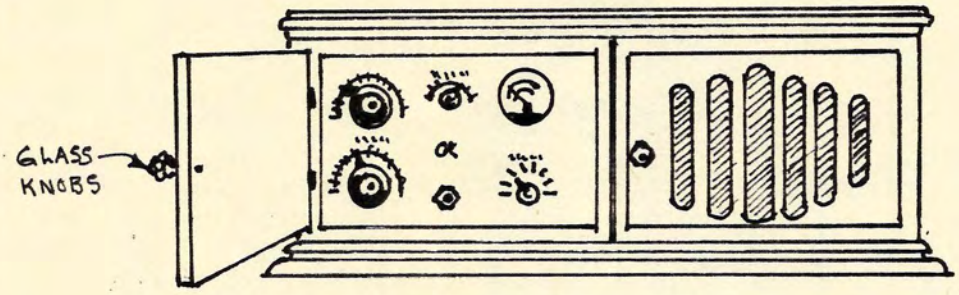




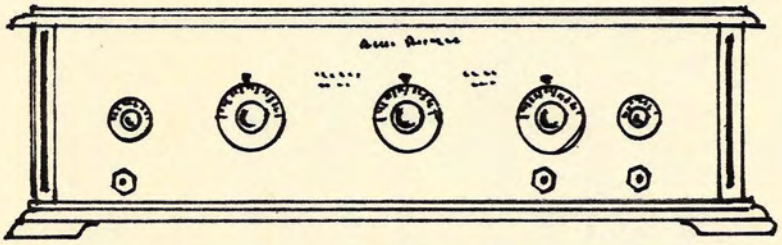
SIGNAL

CABINET CONFIGURATIONS

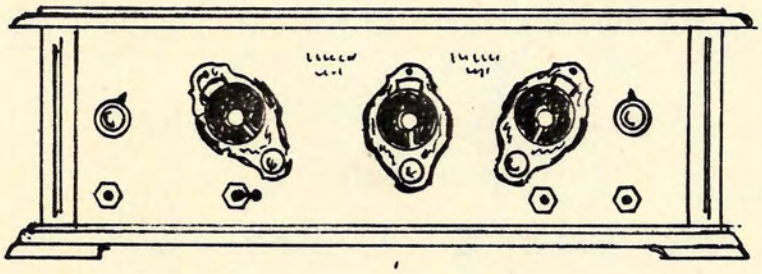
KILBOURNE & CLARK "DeLuxe", '24
(Seattle)



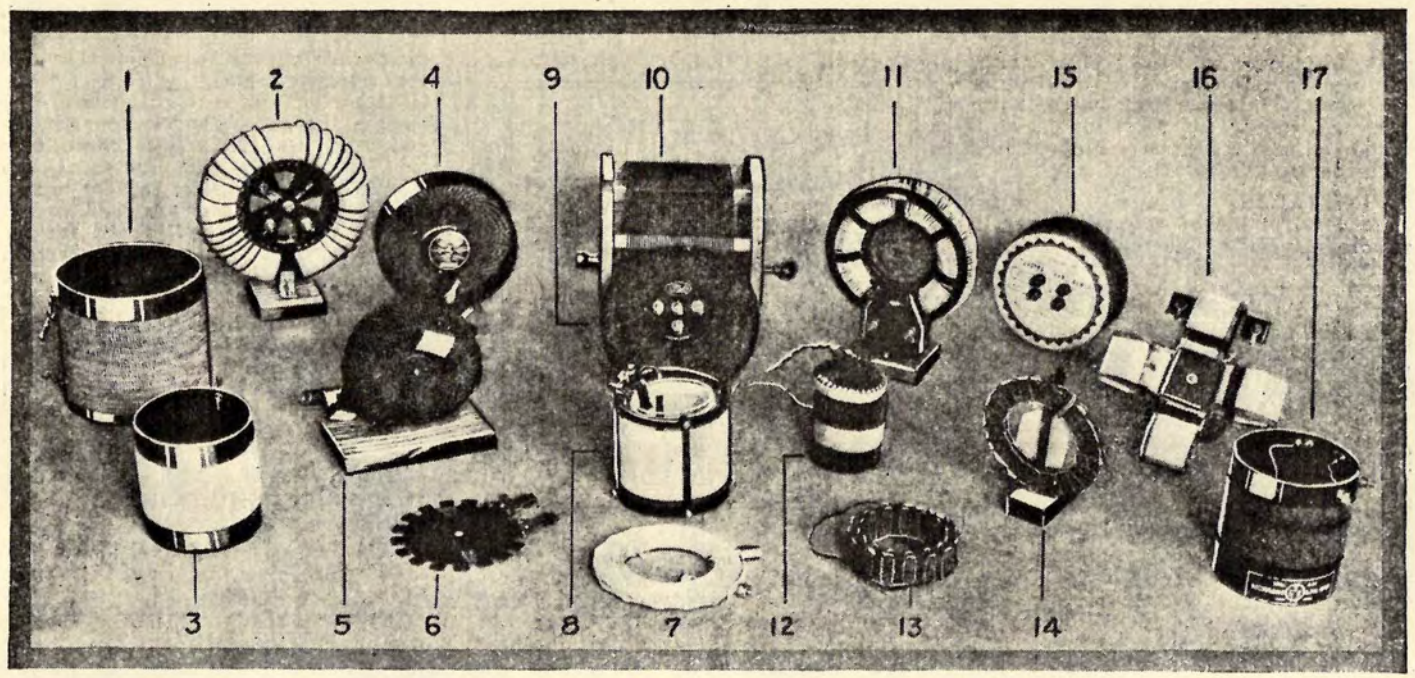
"AIR ROAMER", $140
('24)



(McCall Compensated Circuit; non-regenerative.)



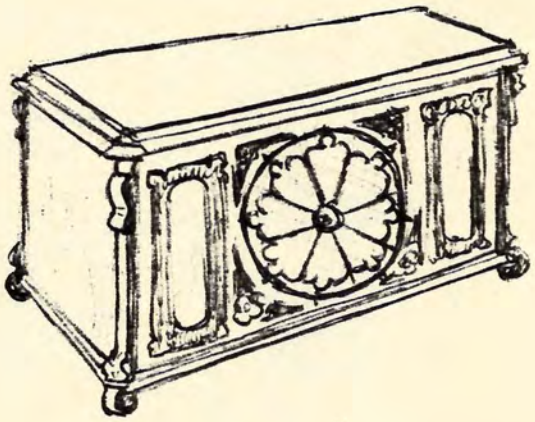
The "AIR ROAMER" offered under the BALDWIN name was unsuccessful; nor did the art-deco dials enahnce the panel in 1924.



1. Bell Wire Solenoid
2. NAXON
3. MARCO
4. ALL-AMERICAN
5. ORBIT
6. TURNEY
7. SICKLES
8. AEROCOIL
9. ERLA
10. Wavemeter Coil
11. THOROLA
12. PATHÉ
13. FRESHMAN
14. COAST
15. SUMMIT
16. QUADRAFORMER
17. BRUNO

COMMERCIAL COIL CONFIGURATIONS, 1926

RADIO IDENTIFICATION

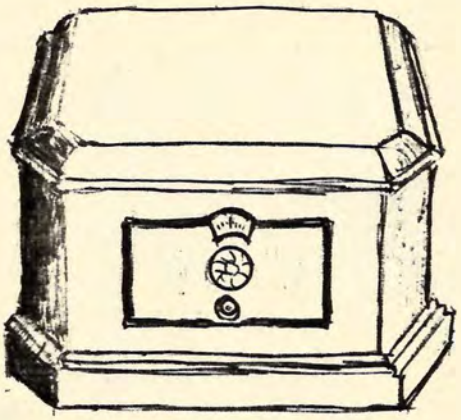


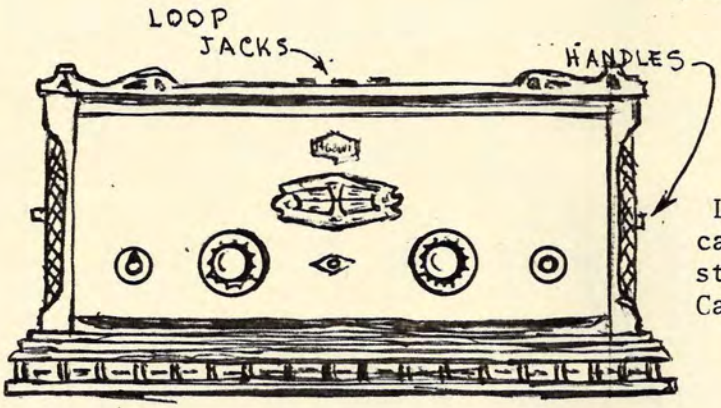
"ULTRADYNE L-3"
1926 - $140

Sans dials and panel; built-in loud-speaker; 2 control levers for station selexion & volume. Designed by Robt. E. Lacault, distributed by Phenix Radio Co. - Lacault's company in NYC.

SPLITDORFF "ABBEY"
6-tube, 1929

Dial knobs were sculptured wood. Cabinet was mahogany, veneers, and rosewood.

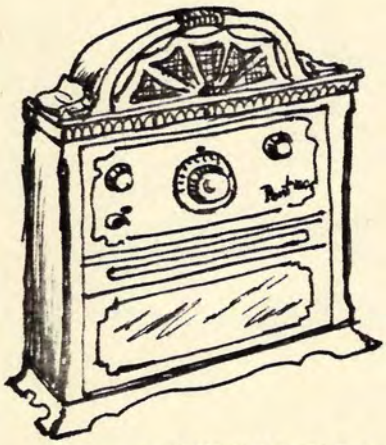




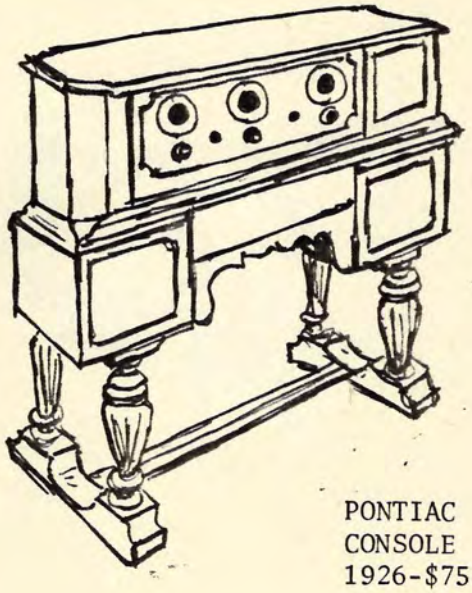
HOWARD MODEL 7 - 1926

Loop connexions atop cabinet; cabinet was 28" over-all. All stages were aluminum shielded. Cabinet finished in walnut burl.

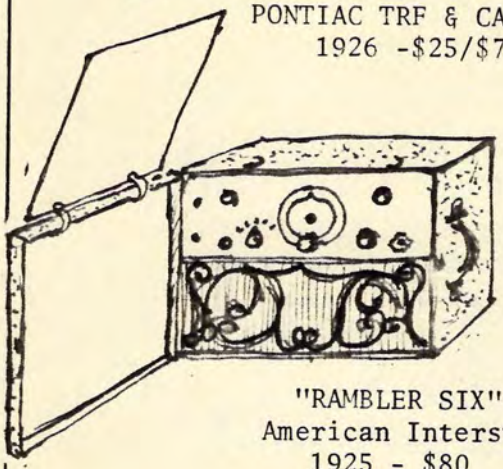
RADIO IDENTIFICATION SKETCHES



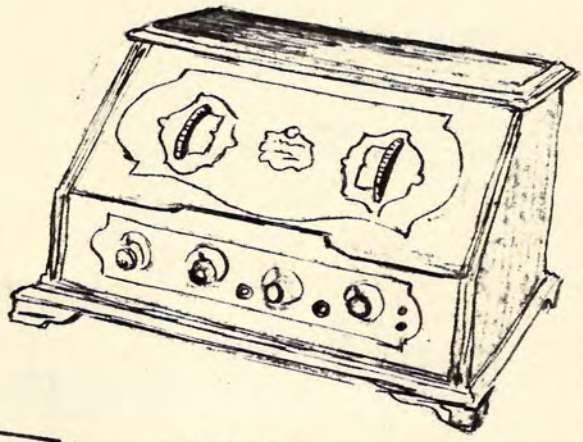
PONTIAC TRF & CABINET
1926 -$25/$75



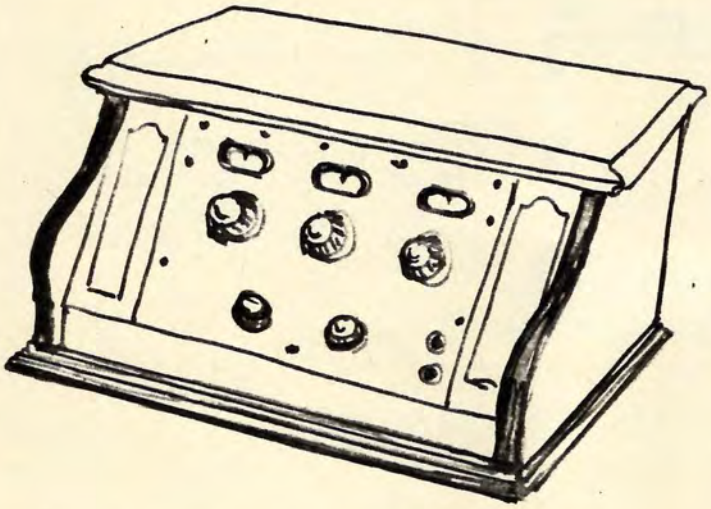
PONTIAC
CONSOLE
1926-$75



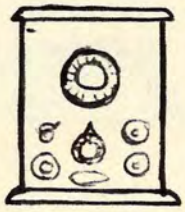
"RAMBLER SIX"
American Interstate
1925 - $80



RADIOLA 20

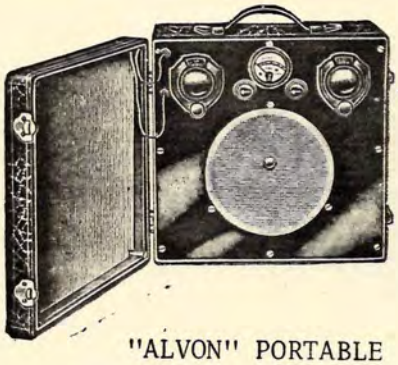


CHELSEA
"TRUPHONIC"
1926 - $60



KODEL C-11
1924 - $10

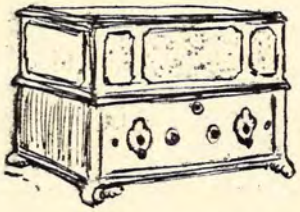
RADIO IDENTIFICATION SKETCHES



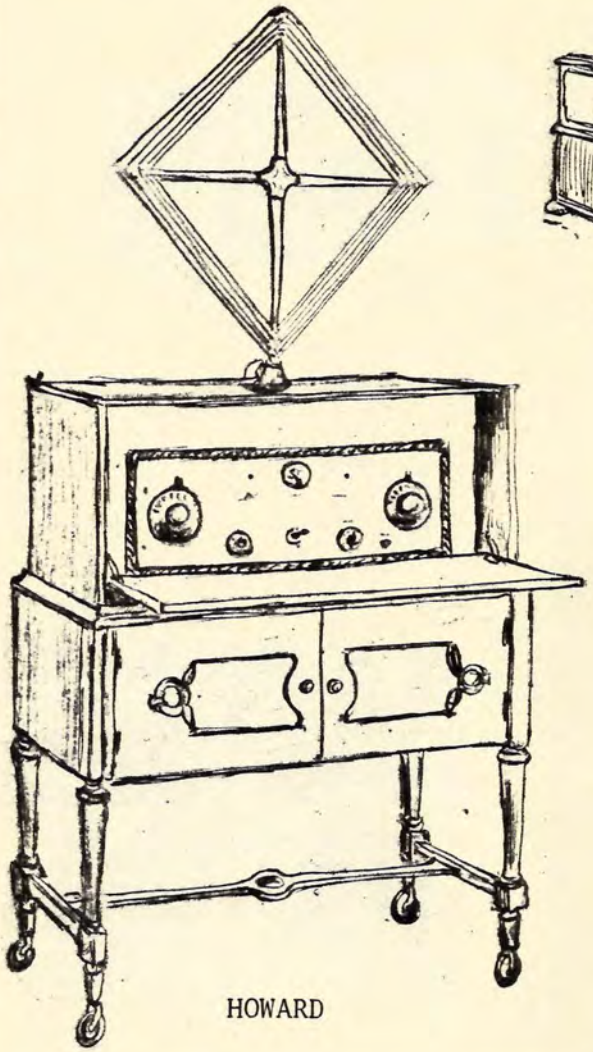
"ALVON" PORTABLE

WARE AD-2
1922-$110

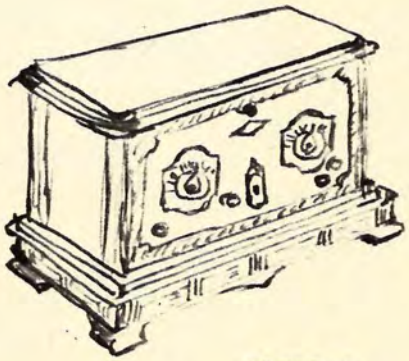
CROSLEY "ORACLE"
Model 59 Chassis



BROWNING-DRAKE

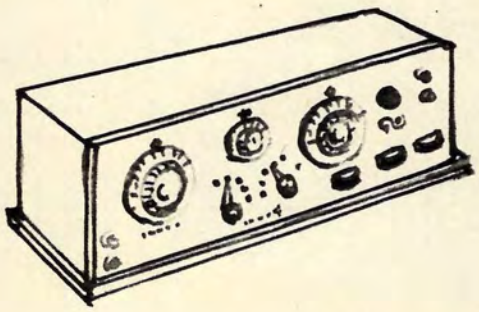


HOWARD

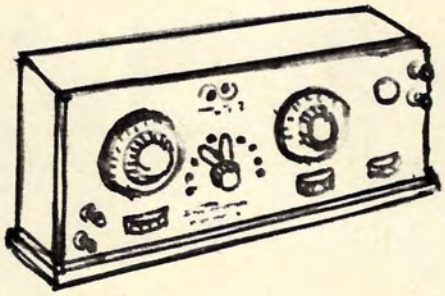


SLEEPER
MODEL 66 CONSOLE
1928 - $175

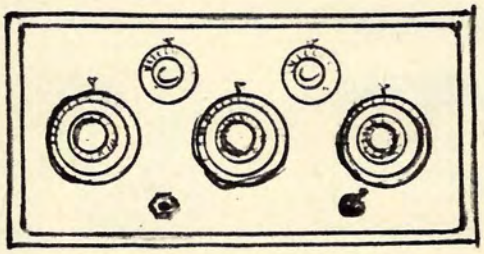
RADIO IDENTIFICATION SKETCHES



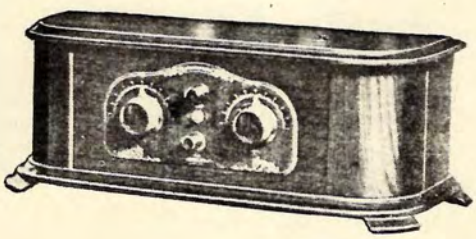
GREBE CR-8; 1921; $80



GREBE CR-5; 1920; $60
68-150 Meters



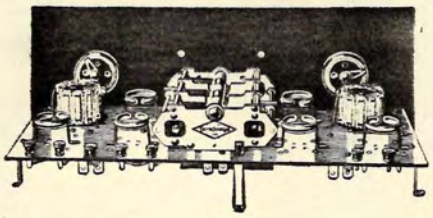
FREED-EISEMANN FE-15, 1924;$90



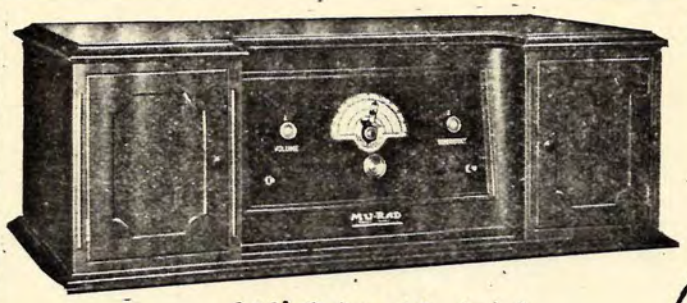
"ARBORPHONE"
Precision Products; 1927;$60

THOROLA 57
(1925 - $60)

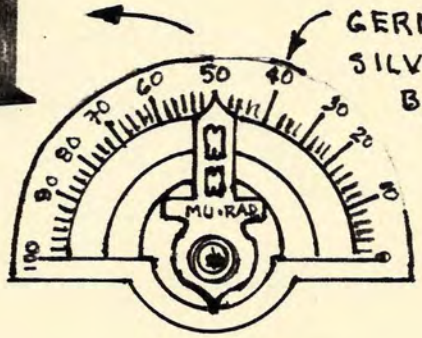
PIERCE-AIRO
1926

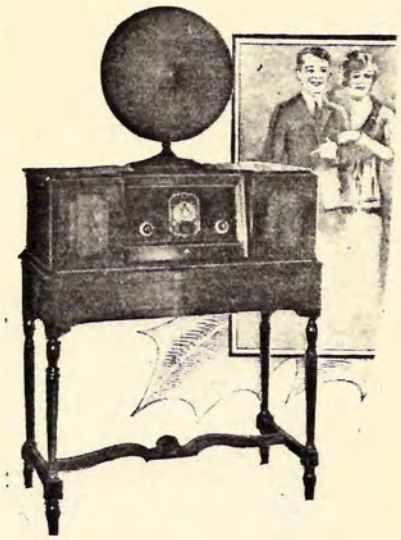


RADIO IDENTIFICATION NOTATIONS



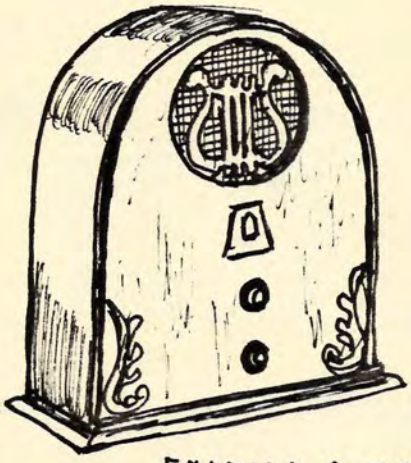
MU-RAD Model A
('26 - 175)
(See Vol. II for Schematic.)



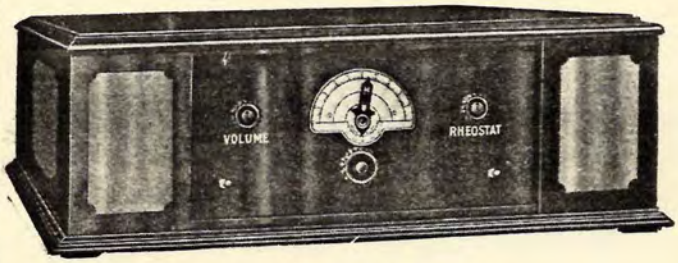


(1926)

MU-RAD "Super Six"



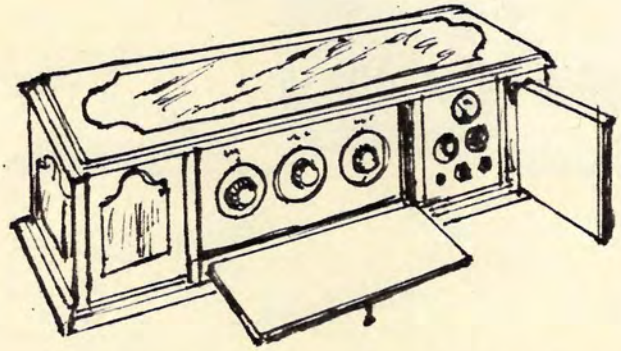
EXCELLO 4-TUBE
S.G. MIDGET-1931



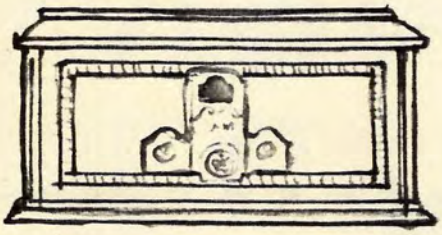
MU-RAD, Model B
('26-125)

CLARION "Junior" MIDGET
1930 - #64 - A.C.

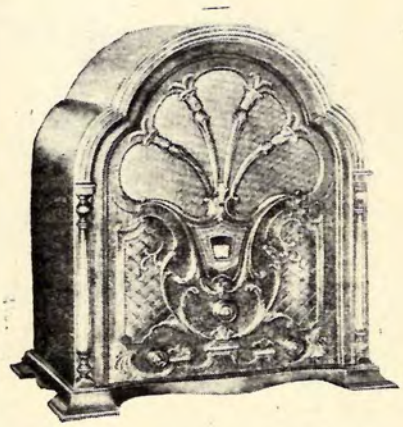
RADIO IDENTIFICATION



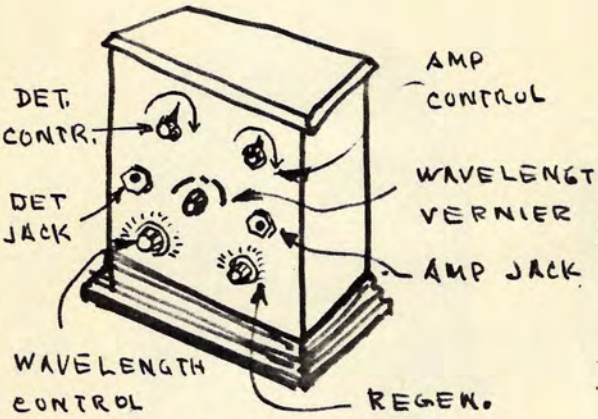
GILFILLAN NEUTRODYNE GN-1
(1925-175) Walnut Cabinet-2-TONE



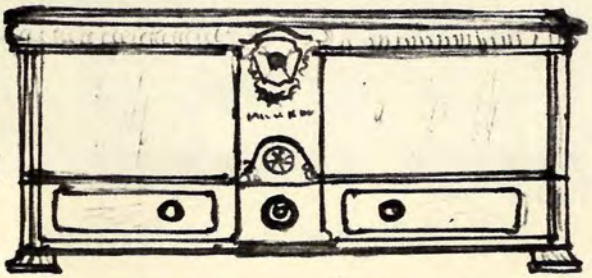
FEDERAL "ORTHOSONIC", Model F-11
(1927-220)



FADA MIDGET SUPER
NEUTRODYNE-1931

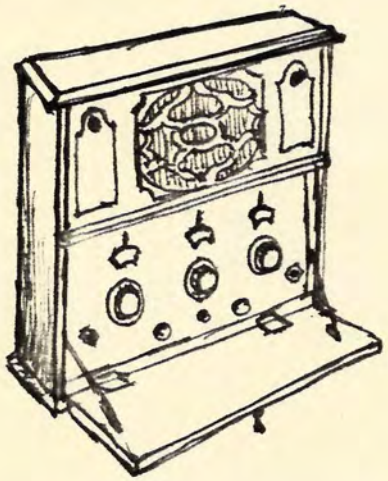


"ECHOPHONE"-1923
(Sunnyvale, California)

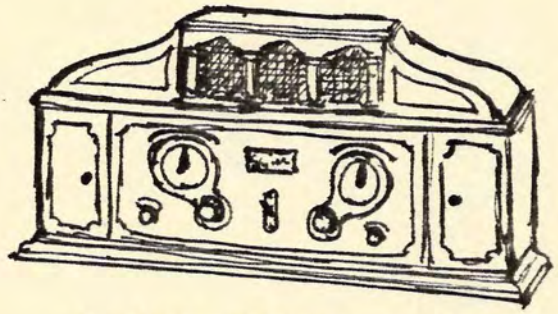


STROMBERG-CARLSON, Model 635
(1928-185)

RADIO IDENTIFICATION

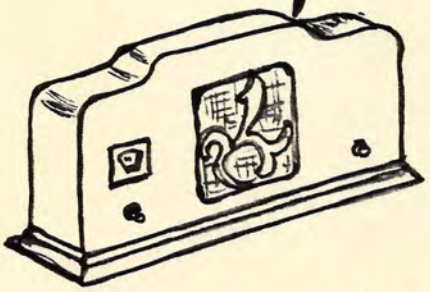


FRESHMAN "CONCERT"
(1925 - 75)
(Mahagony, 2-Tone)

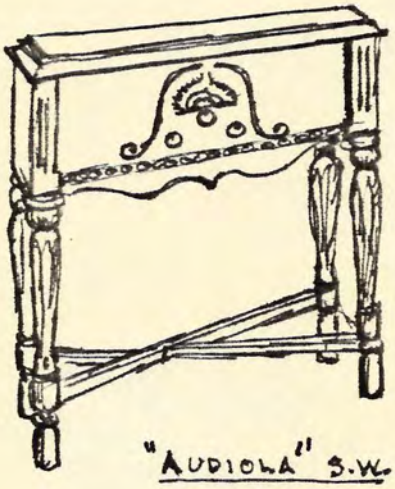


SLEEPER "SERENADER"
(5-TUBE, T.R.F. ~ 1925 - 100)

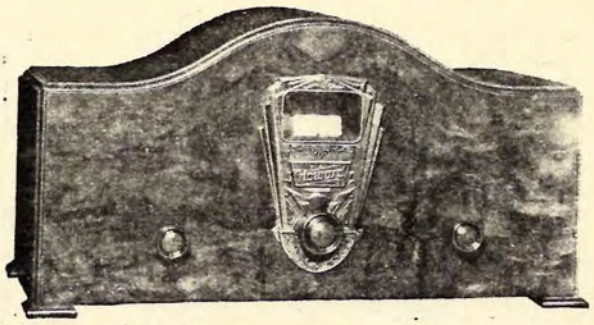
2-TONE VENEER



AUTODYNE "TRIPLEX"
(3-Tube, RC, 8.32)

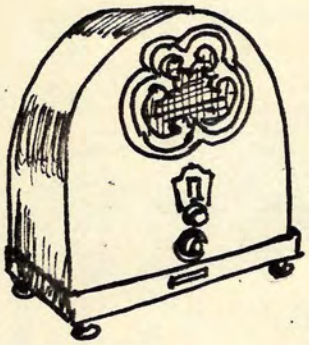


"AUDIOLA" S.W.
CONVERTER
20 - 200 Meters
(27.5" x 18.5 x 12")
(Long & Short Waves)
(THOR - 33.27)

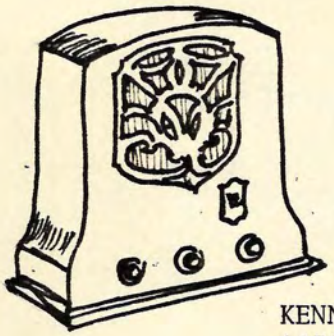


HOWARD REMOTE CONTROL, 1930

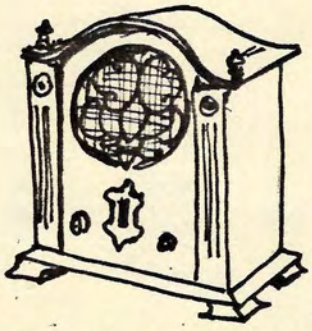
MIDGET RADIO CONFIGURATIONS



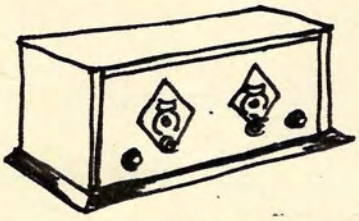
RADIETTE MODEL 14
Keller-Fuller
1930 $60 (6 Tubes)



KENNEDY "CORONET"
1930 $70



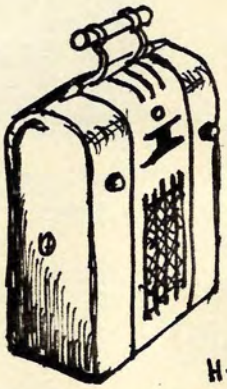
SPARTON "JUNIOR"
Model 410; 1930
(4-Tubes.)

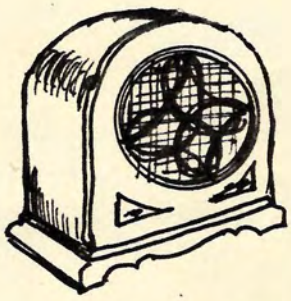


"FIND ALL FOUR"
Cisin-Allied - '30-
(4Tubes) ($35)

GUARANTY RADIO
Model MDST
(6 Tubes)

PREMIER MIDGET
1930 - 6 Tubes

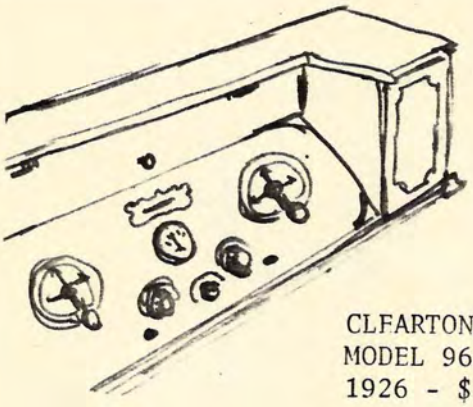




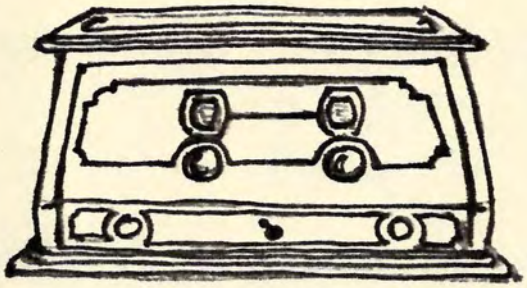
BOSCH - 1933

H-126/L-12

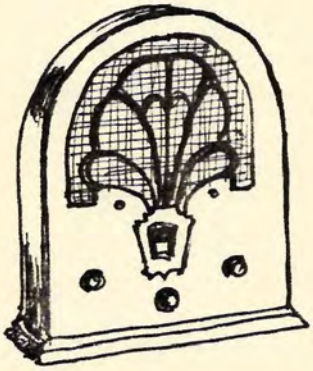
RADIO IDENTIFICATION



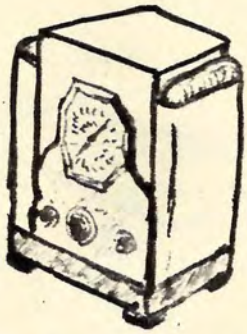
CLEARTONE
MODEL 96;
1926 - $185



HENNINGER TRF, 1926

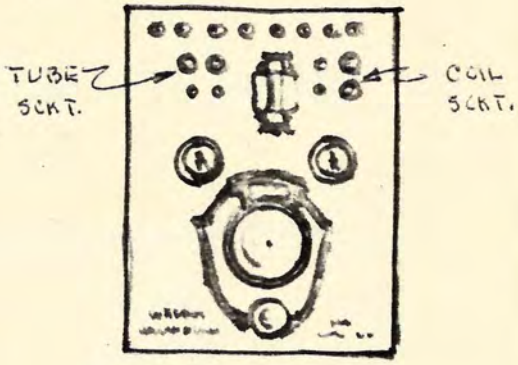


BOSCH "ESSEX"
1932 - $56

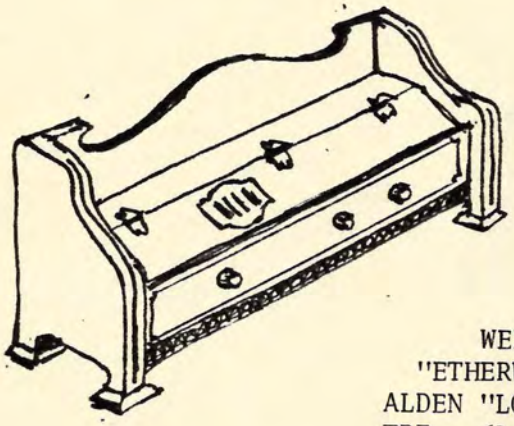


STROMBERG-CARLSON
S.W. CONVERTER,
MODEL 69

BROOKFIELD
1929 - $6.50
(Spkr.)

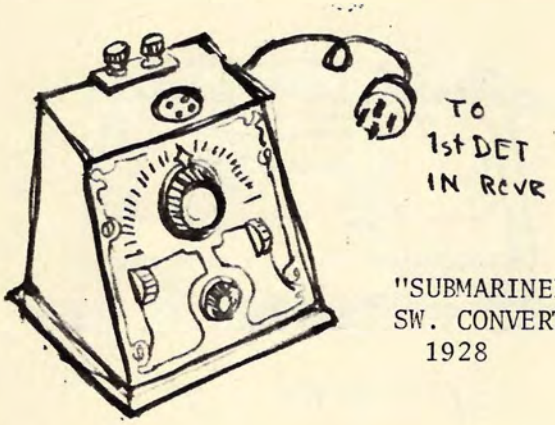


WALKER "MULTI-FLEX"
UNIT - 1927

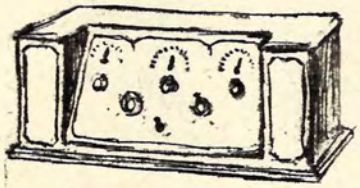


WELTY
"ETHERWAYS"
ALDEN "LOCALIZED"
TRF - (Lab Model)
1926

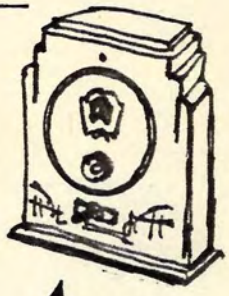
RADIO IDENTIFICATION SKETCHES



"SUBMARINER #3"
SW. CONVERTER
1928



CROSLEY RFL-75

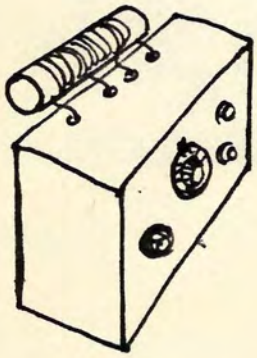


I.C.A.
SW. CONVERTER
1929 - $5.50

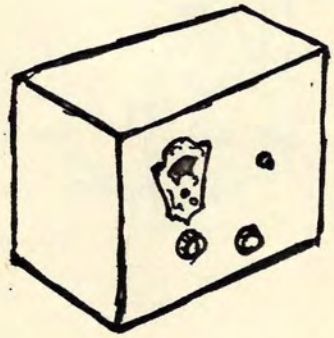
Bakelite Cabinet
6¼" x 4.75" x 2¼".

One tube - 56 or
37 or 76.

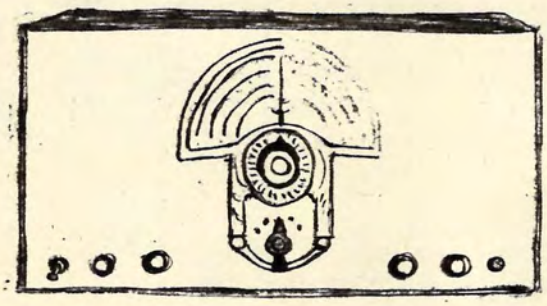
Cabinet was also
used for the ICA
"Pied Piper"
Xtal. Set - $4.26.



AERO
SW. CONVERTER
$6

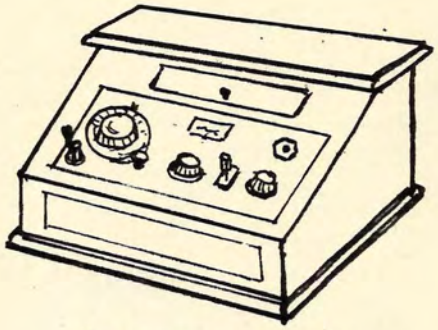


AERO
SW. RECEIVER
$12.50



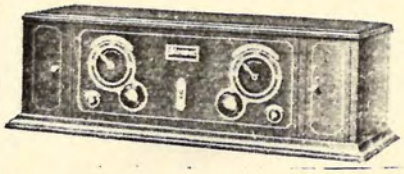
TOBE COMMUNICATIONS
RECEIVER - 1937

SLEEPER CONFIGURATIONS, 1925



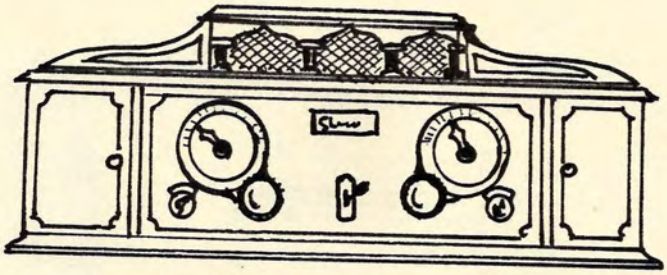
"MONOTROL" - $130
(Inverse Duplex)

"TROUBADOUR" - $65
(TRF)



(5-TUBE TRF)

"SCOUT" - $90

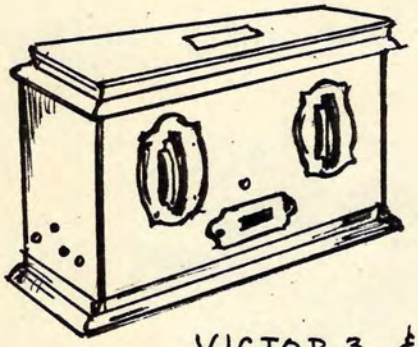


"SERENADER" - $115

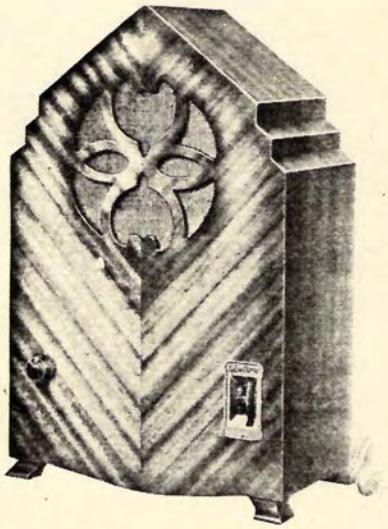
"SCOUT" CHASSIS w/ BUILT-IN SPEAKER (Belle Plaine Cabinet) ('26-18)

(RW-12-19-25 REREVIEW, q.v.)

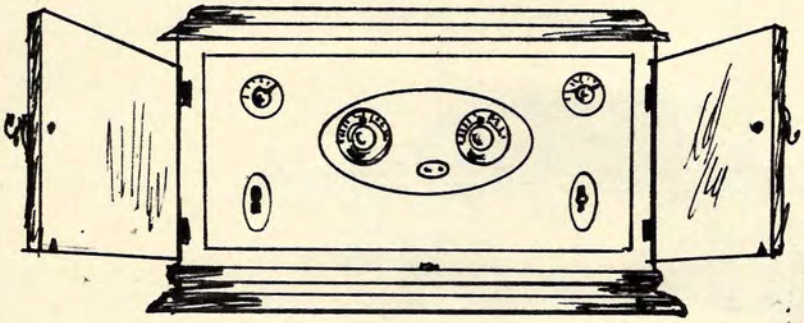
RADIO IDENTIFICATION



VICTOR 3 &
GECOPHONE BC2930
Wood Base & Top - Metal Case
(1928)

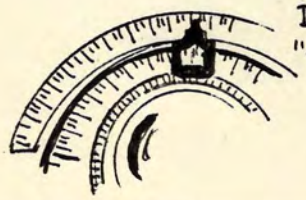


"Gloritone" - U.S.R. & T.V. - '30



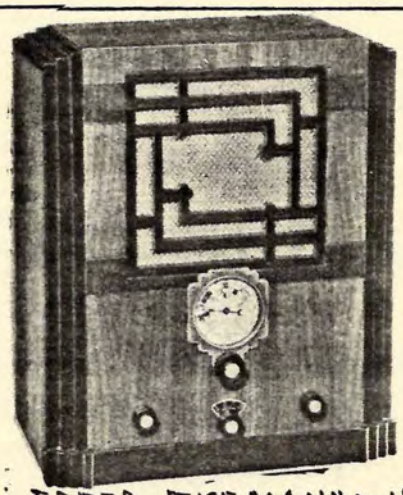
BURNDEPT "ETHODYNE"
7-TUBE SUPER-HET (1927)

RADIETTE - Model 11
(1930)



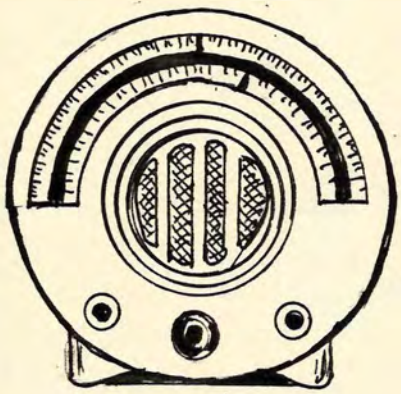
DIAL DETAIL
"ETHODYNE"

INTERESTING LATER CONFIGURATIONS



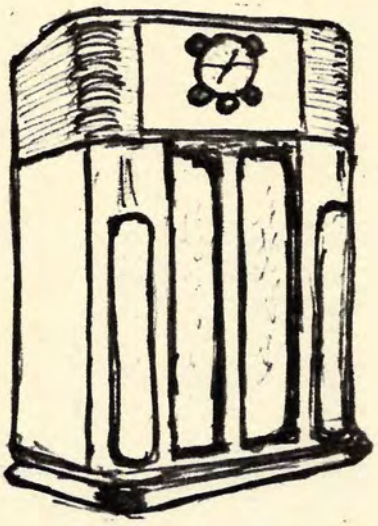
FREED-EISEMANN - 1936

7 TUBE, 4-BAND, SUPERHET
15 - 2000 M ~ 462 KC IF.
6D6, 76, 78(2), 77, 42, 80
15"x13"x 8½" - 16#

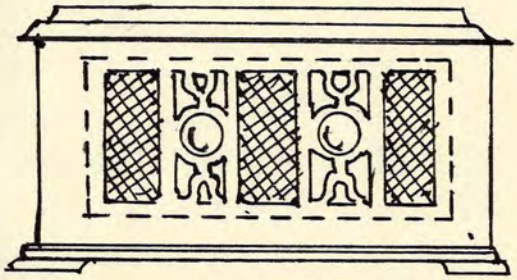


EKCO AD65-BC/SW
G.B. (1934)

"Sentinal Portola"
U.S. Radio & TV Corp.
1930 - $18

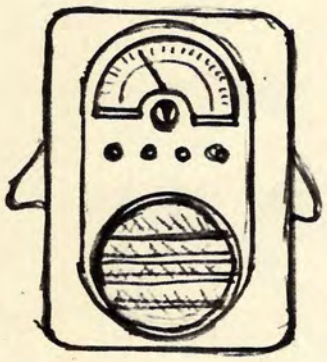


ZENITH 10-5-160
1936, 10 Tubes
42" High - $140



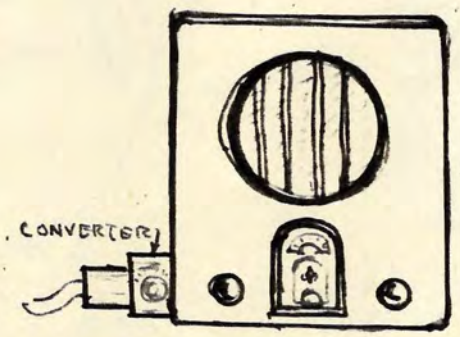
A-K MODEL 555 - 1934

INTERESTING LATER CONFIGURATIONS

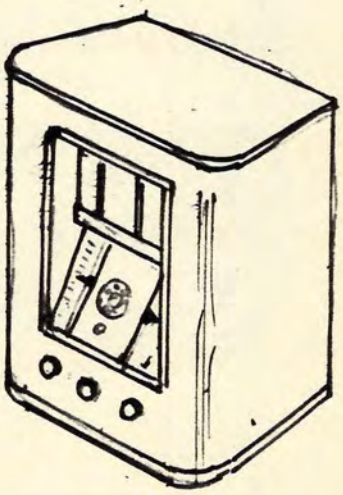


ECKO (ENGLAND) 1936

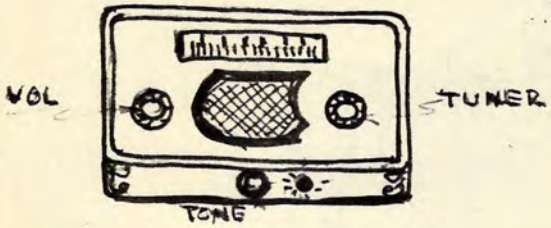
All plastic portable; handles moulded into case;inward tilting dial; shadow tuning.



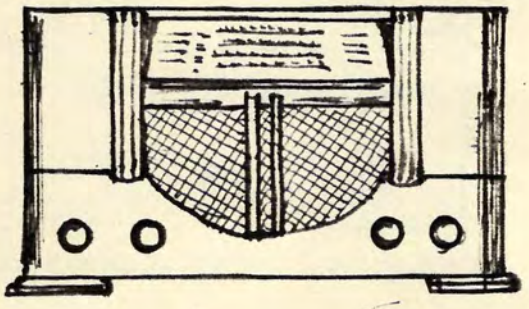
VOLKS RADIO with SW Converter plugged into side. (Germany-1936)



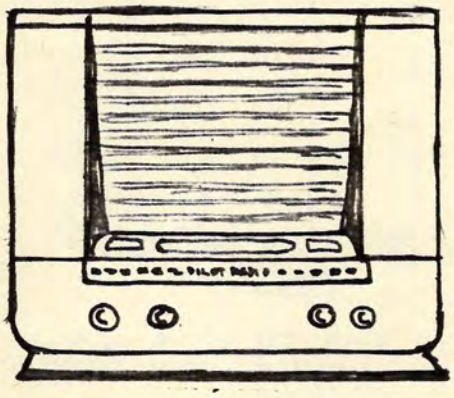
TELEFUNKEN 1936; (German)- telephone-type dial; dialing action moves pointers up & down.Dial had pre-set stations - 73 = Berlin; 42 = London; 29 = Rome, etc.



FRENCH AC/DC MIDGET: 1934; designed to use American tubes.

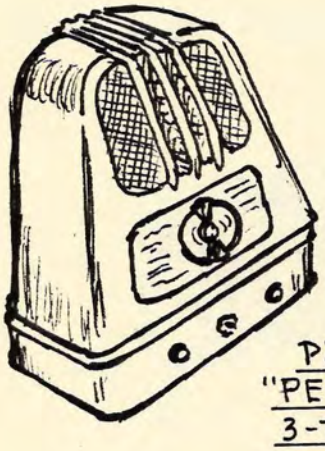


ANDREA 3-BAND MODEL T-16, 1947

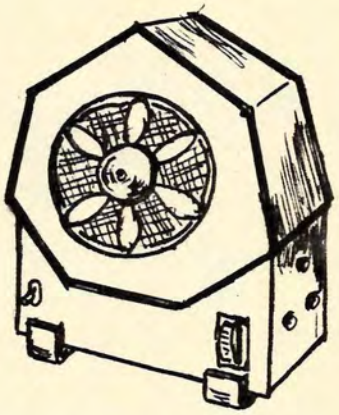


PILOT MULTI-BAND MODEL T-741 (1948)

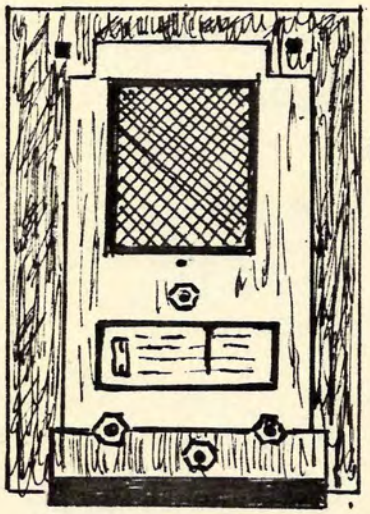
INTERESTING LATER CONFIGURATIONS



PHILCO
"PEOPLE'S SET"
3-Tube AC/DC
PLASTIC (1934)

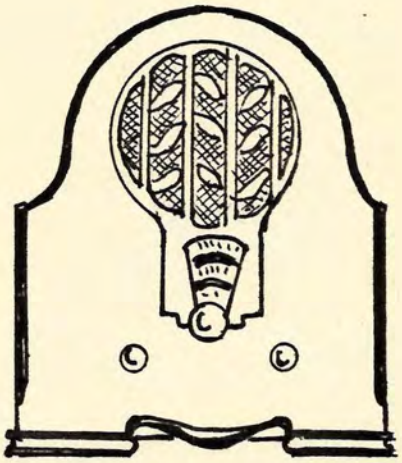


PHILCO 2034
3-TUBE TRF-AC
(1930)



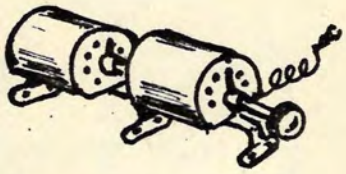
(3-Tone
Veneered
Cabinet)

FERRANTI "NEW ARCADE"
4-TUBE SUPER-HET AC (BC/SW)
(1934)



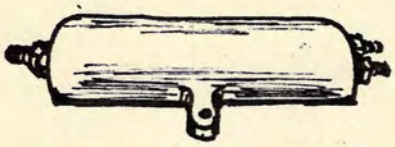
PHILIPS "SUPERINDUCTANCE"
#63A - 4-TUBE TRF-AC
(1933)

EARLY RF TRANSFORMERS

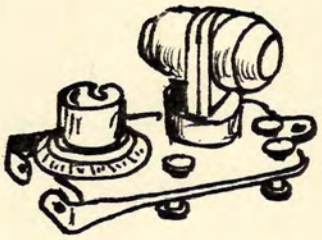


COTOCO RF XFRMR.
(1922)

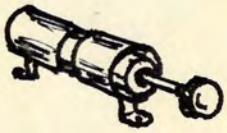
RAULAND RF XFRMR
(All Frequencies - 1926)



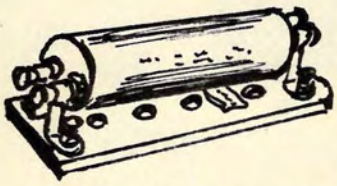
AEROVOX RF XFRMR.
Designed by Dr. D.K. Lippincott & B.F. McNamee. (Also Known As "Inductive Cplr.")
(1922)



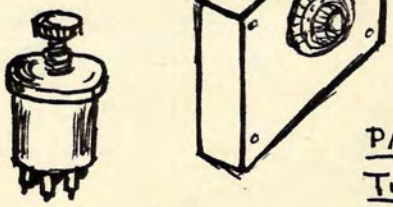
EISEMANN RF XFRMR.
(1923)



DAY-FAN RF XFRMR.
(P-P) (1922)

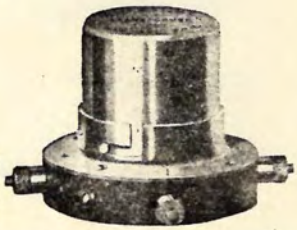


FEDERAL Type 29 RF XFRMR. 125-300 Meters
(1924)

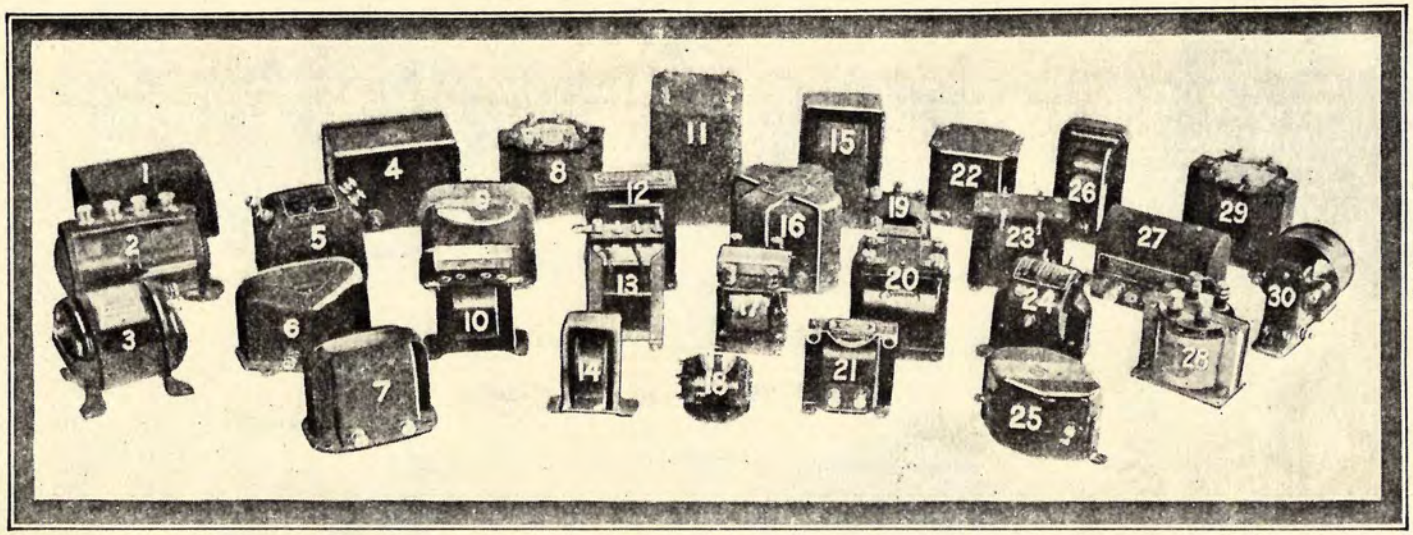


PATHÉ
Type "P"
(1924)

DONGAN RF XFRMR.
(1924) Type RO-2



RHAMSTINE
(1923 - $4.50)

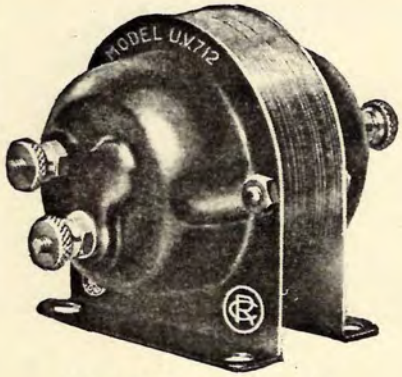


TRANSFORMER CONFIGURATIONS IN 1927

1. Como
2. General Radio
3. Karas
4. Jefferson
5. Modern
6. Precise
7. Perry
8. Wagner
9. Acme
10. Quality
11. Marlefier
12. Thordarson
13. Coto
14. Thompson-Levering
15. Thordarson
16. Erla
17. Supertran
18. Hedgehog
19. Rauland
20. Samson
21. Dongan
22. AmerTran
23. Kellog
24. All-American
25. Bremer-Tully
26. General Radio
27. Como
28. Foster
29. Magic
30. Hart & Hegeman

NOTE: The first General RAdio reference is for the English manufacturer; the second reference is for the American firm.

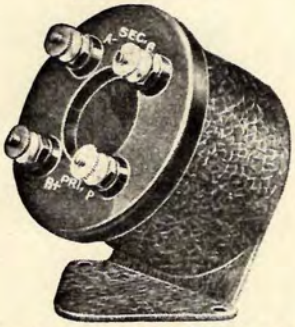
AF TRANSFORMER CONFIGURATIONS



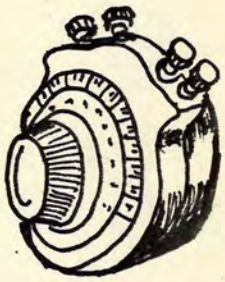
U.V. 712 (1921-7)
(R.C.A.)
(G.E.)

SACO-CLAD
AF XFRMR.
(FIRCO, '21-5)

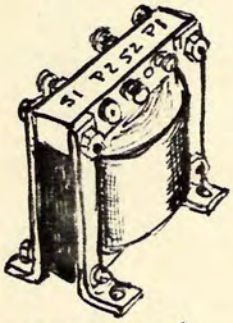
RELIABLE ('26-5)



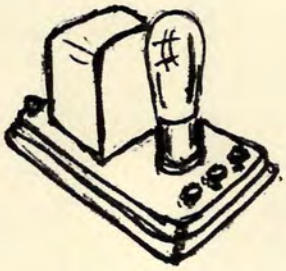
IF XFRMR. "MAXUM"
('26-6)



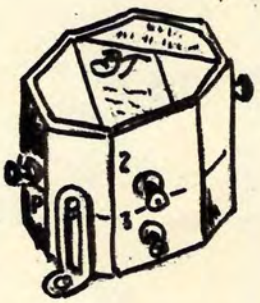
"PHUSIFORMER" - DeROY
('26-9)



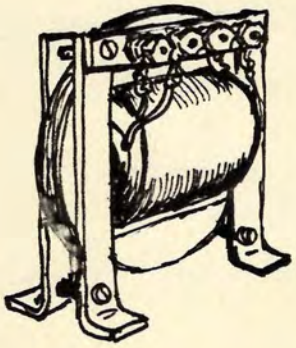
AMRAD "Amplifformer"
(1921, 4.50)



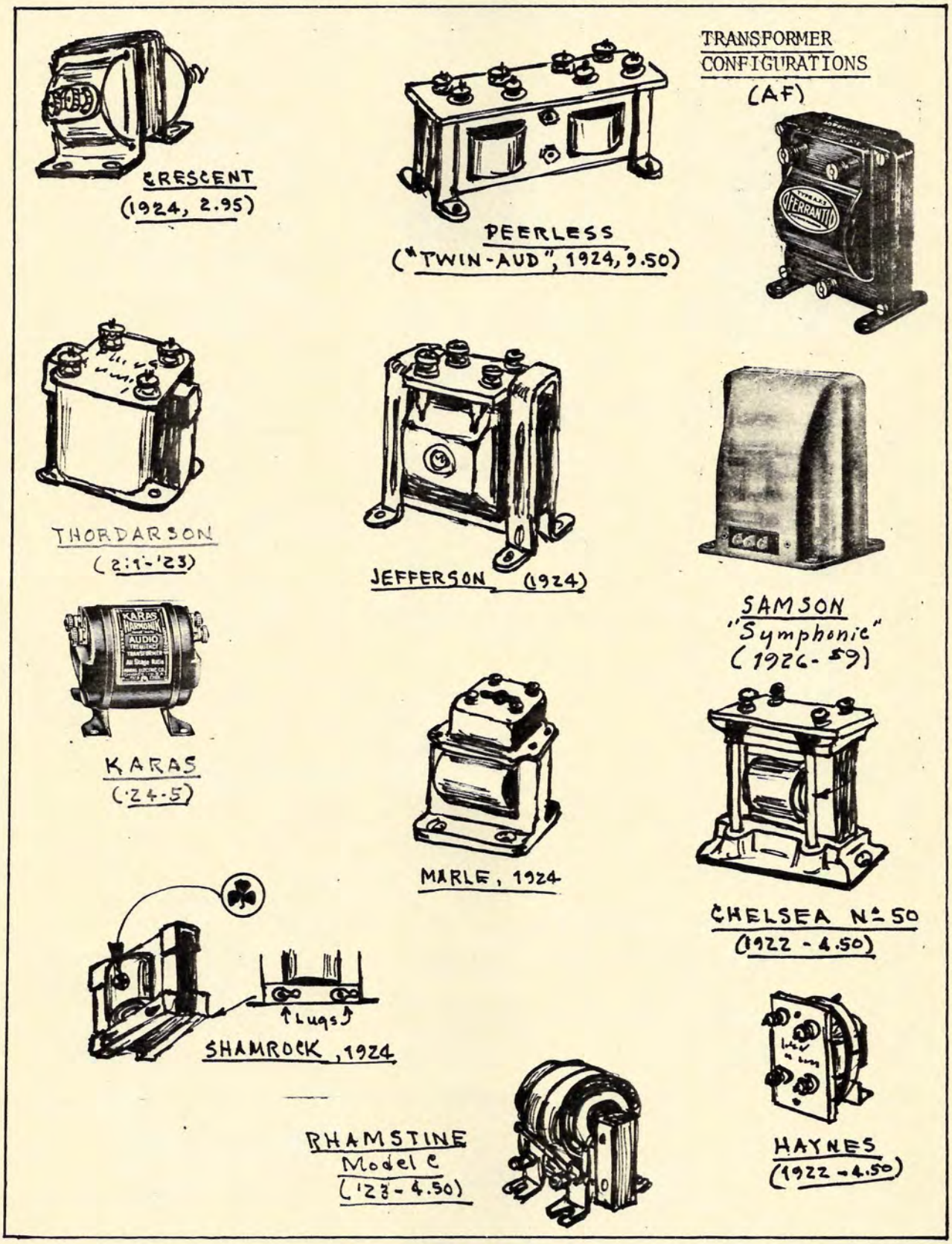
PILOT "REDI-BLOX"
AF XFRMR.



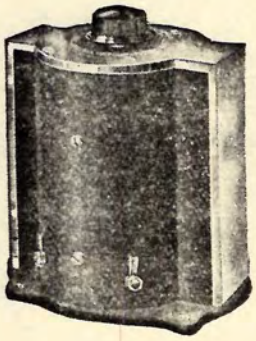
BREMER-TULLY
AF XFRMR. (1926)



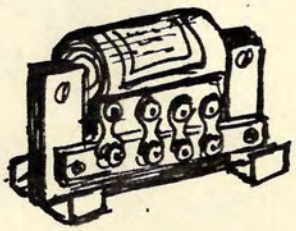
Q.O. AMP. COIL
CLAPP-EASTHAM ('24-4)


TRANSFORMER CONFIGURATIONS (AF)
CRESCENT (1924, 2.95)
PEERLESS ("TWIN-AUD", 1924, 9.50)
FERRANTI
THORDARSON (2:1-'23)
JEFFERSON (1924)
SAMSON "Symphonic" (1926-'29)
KARAS HARMONIC AUDIO FREQUENCY
KARAS ('24-5)
MARLE, 1924
CHELSEA No 50 (1922 - 4.50)
Lugs
SHAMROCK, 1924
RHAMSTINE Model C ('23 - 4.50)
HAYNES (1922 - 4.50)

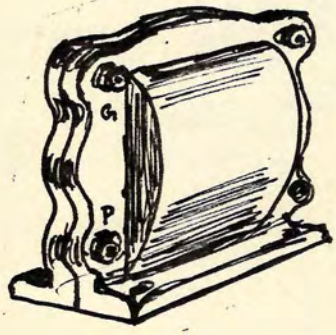
EARLY AF TRANSFORMER CONFIGURATIONS



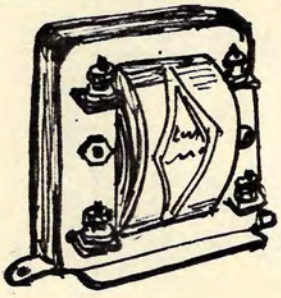
GENERAL INSTRU.
Variable AF
(1927 - $7)



COTO Type 4500

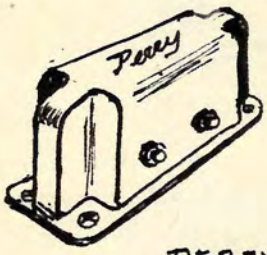


SAMSON HWA-1
(1923 - $7)

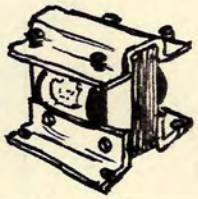


COTO Type 4000
(1923 - $5)

PACENT
"Autoformer"
(1925 - $10)



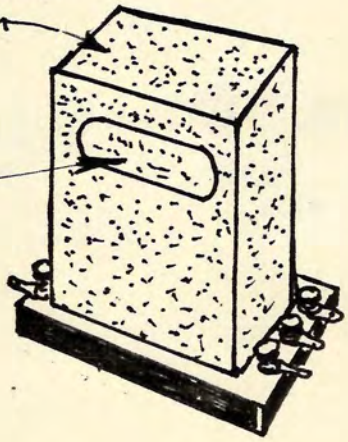
PERRY
(1926 - $5)



FORD RADIO & MICA
(1926 - $7)

HARPER METALOID
"The Original Canned Coil"
MFG. BY
CRIBBEN RADIOCORP.
Chicago

Crystaline
Finish



HARPER METALOID
(Potted) (1925)

TYPICAL EARLY AF XFRMR. CONFIGURATIONS

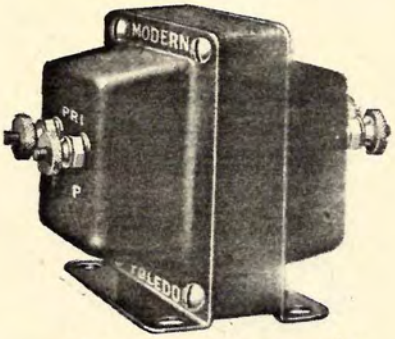
THORDARSON
(1922-$4)

DONGAN "5"
(1923-$5.75)

SILVER-MARSHALL

SAMSON (Early)
(HW-R1)

SANGAMO
(1927-$10)



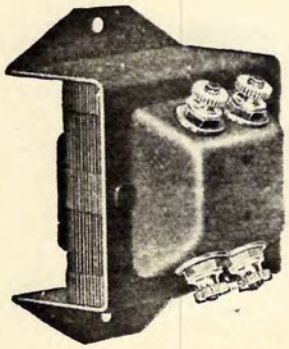
"MODERN" (1922-$6)

ACME A-2
(1924-$5)

AMERTRAN
"DeLuxe"
(1927-$10)

ERLA

EARLY AF TRANSFORMER CONFIGURATIONS



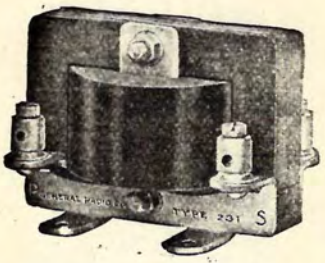
BENWOOD - $5

JEFFERSON #41
$4

FREED-EISEMANN
$6

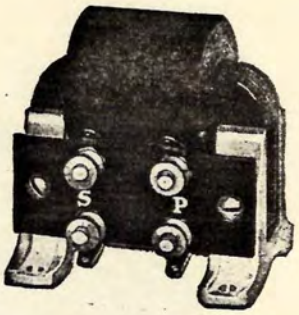
R·S·L $2.75

AMERTRAN
$7

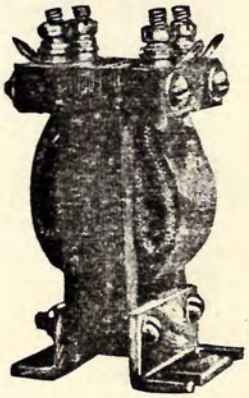


GENERAL RADIO 231-A
$8

PRECISE - $6.25



RAULAND
(Successors To
All-American
Electric Co.)
$4.50



FEDERAL 226-W
$7.10

TYPICAL EARLY AF XFRMR. CONFIGURATIONS

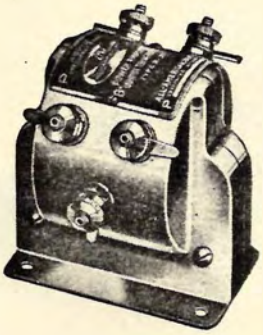
Melo-Heald
(1927-$3)

SAAL
OCTOFORMER
(1925-$8)

GENERAL RADIO
Type 285

GENERAL RADIO
(1924-$5)

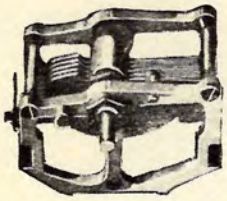
KARAS
"Harmonik"
(1925-$5)



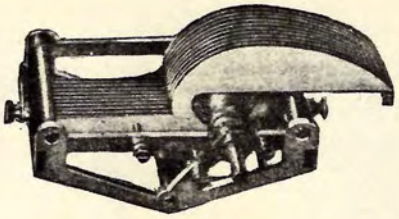
RAULAND P-P
(1926-$4)

EARLY VARIABLE CONDENSER CONFIGURATIONS

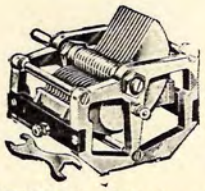
MAR-CO



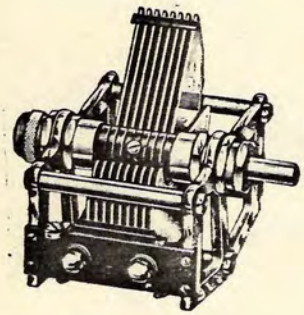
BREMER-TULLY



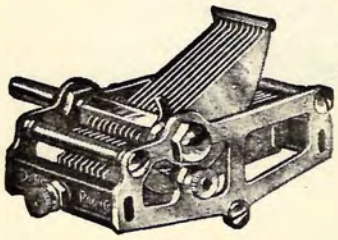
PILOT



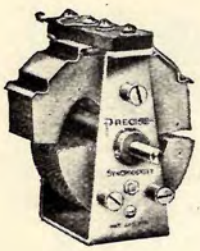
BT "Lifetime" Condenser



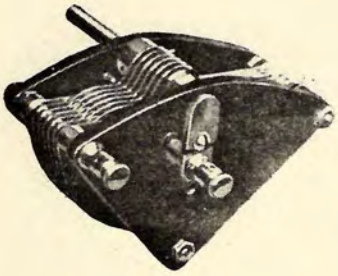
CAMFIELD



AMSCO

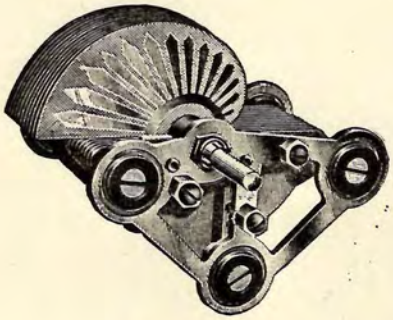


PRECISE

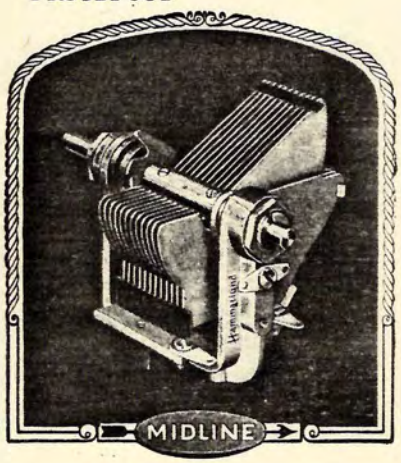


HORNE

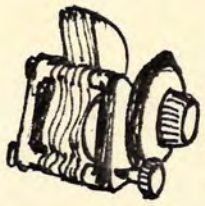
PROUDFOOT



HEATH (G.B.)

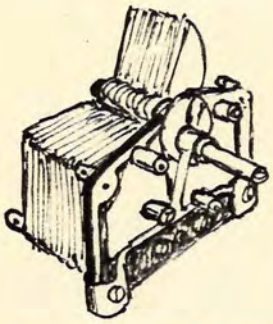


VARIABLE CONDENSER CONFIGURATIONS



BETHLEHAM SPARK PLUG
(1922 - $5)

CHELSA No. 1
(1922 - $6.50)
(Also MURDOCK)



BENJAMIN S.L.F.
No Rere Plate;
Silver-plated.
(1925 - $13)

Most of the wild and weird configurations of variable condensers occurred from 1919 through 1924. Thereafter, the variable condenser configuration may be deemed a generic reference, with the usual exceptions, such as short-wave variables designed by such men as Jones, Lacault, Flewelling, Hammarlund.

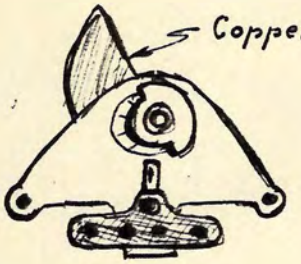
The mad rush to claim superiority of some feature of this-or-that configuration seems to have turned on using various materials for end-plates - e.g., copper, aluminum, Bakelite, hard-rubber, steel, Micarta. Some were incredibly elabourate, and frequently showed much engineering ingenuity, such as those designed by DeForest, Erla, Mar-Co, and Amsco - where the construction resembled the innards of a Swiss watch. But mass production quickly reduced most variables to a generic status.

Towards the end of the Twenties what were probably the best variables were manufactured by Cardwell, Hammarlund and National. Early variables by Pilot, by contrast, were rather crudely made, even though their design parameters were scientifically correct.

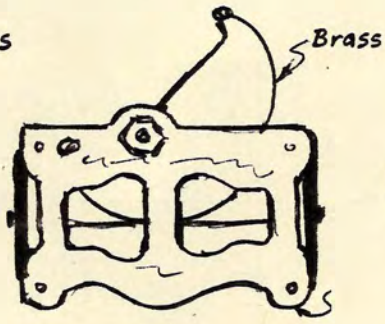
The great bug-bear of most mass-produced variables was the use of pot-metal, also known as mush-metal. Today, pot-metal metallurgy is vastly superior, but many an old radio set using pot-metal parts have been found to be totally inoperative, where the variable shafts are frozen, cracked, broken. The repair of such variables is not economically feasible, on the one hand; and almost impossible, on the other. The simplest solution is to substitute a better variable with the same tuning range.

Variables became standardised in the 30s.

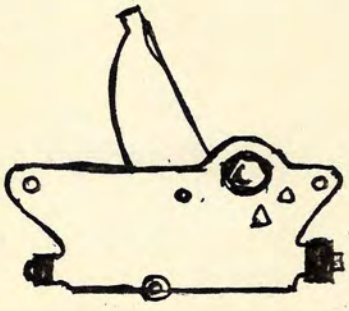
TYPICAL EARLY VARIABLE CONDENSER CONFIGURATIONS



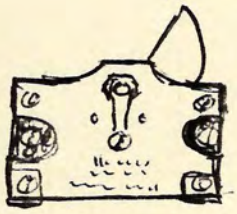
302 μμfd
(MAKE UNKNOWN)



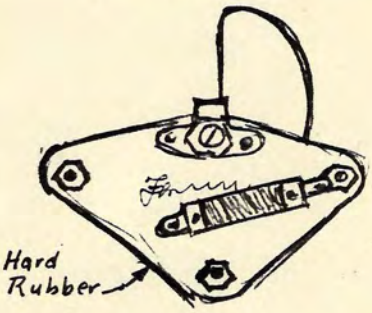
FREED-EISEMANN
(FF-EE-700)



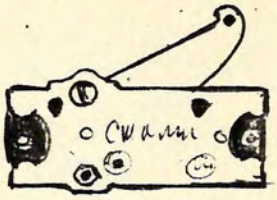
PILOT S.L.F.
Brass Tps & Brass End Tps. No Markings.



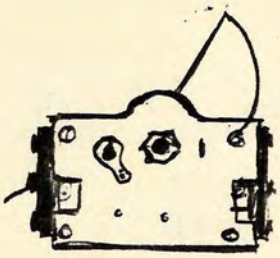
FRESHMAN



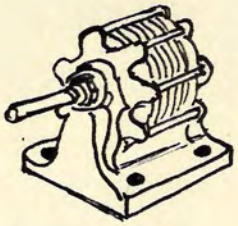
FREED-EISEMANN
(FE-70)



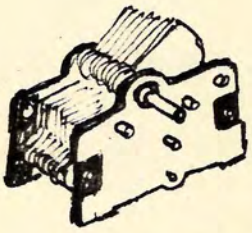
PILOT
"Capaciqrad"



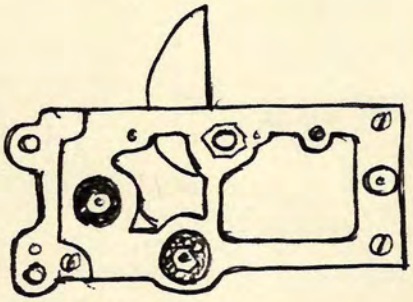
H.L. Co.



DIRECT RADIO
(1923-23)
(360° Rotation)



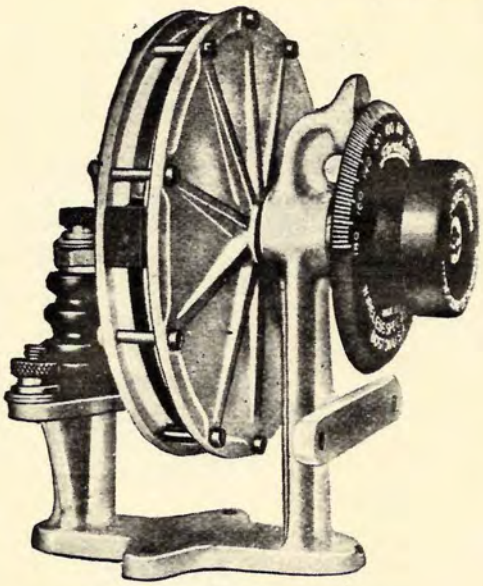
PILOT-1225



NAT'L. "Equacycle"; 1225

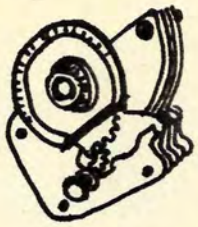
SONGBIRD

TYPICAL EARLY VARIABLE CONDENSER CONFIGURATIONS

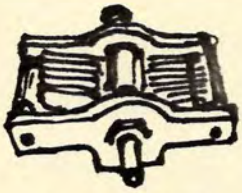


RCA "FARADON"
(UC-1831. 1921-$9)

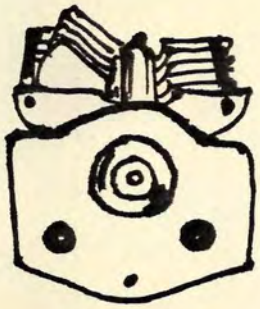
HAMMARLUND "C"
(1925)



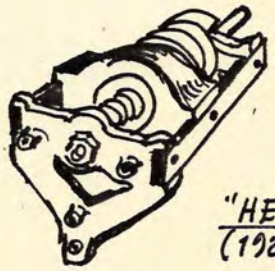
MAZDA
(1922-$7)



GROSSNER
(1924-$4)

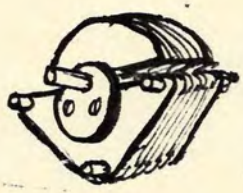


"BRADLEYDENSER"
Allen-Bradley
(1925)

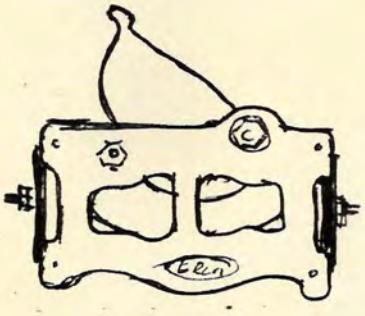


"HELICON"
(1927-$6.25)

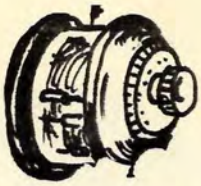
COTOCOIL
(1922)



CARLSON-JOHNSON
(also) SIMPLEX,
ZIMMERMAN,
LOTTS,
UNITED.
(1922)

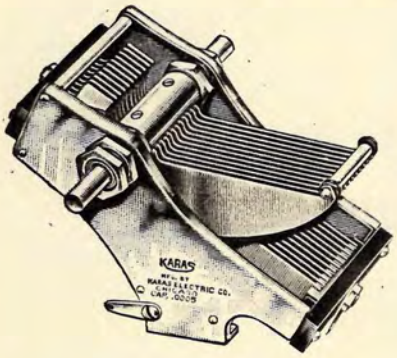


"ERLA"
SCOVILLE MFG. CO.
(1918)

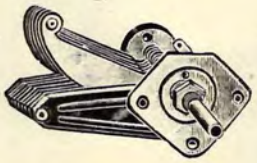


DeFOREST CV
WESTFIELD
(1922-$5)

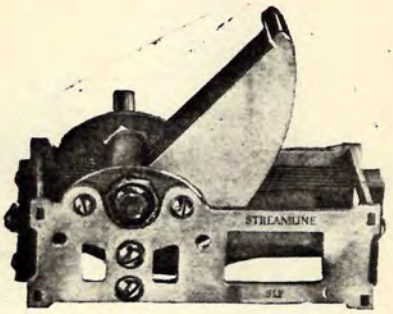
TYPICAL EARLY VARIABLE CONDENSER CONFIGURATIONS



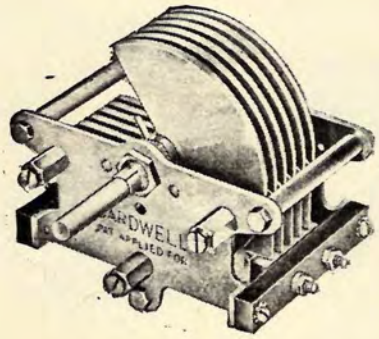
KARAS-1925
($5.50)



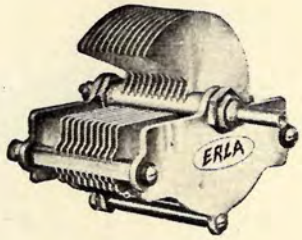
BENJAMIN-1924
($2.32)



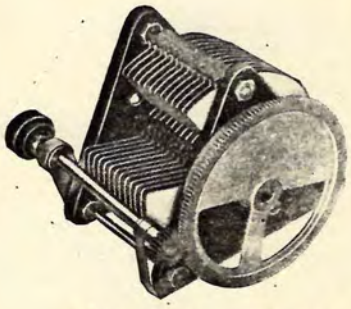
STREAMLINE
(1925-$2.50)



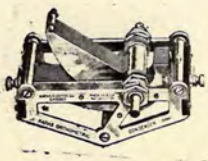
CARDWELL 129-E
(1924-$5)



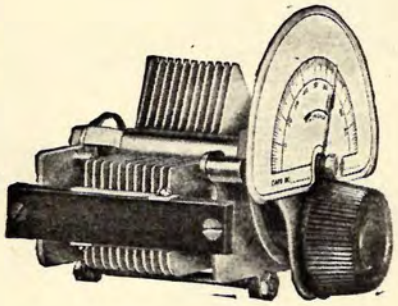
"ERLA"
(1919-$5)



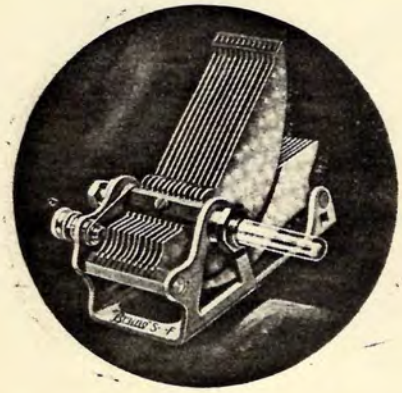
GENERAL RADIO
(1923-$2.50)



KARAS
"Orthometric
(SLF-1925)



SIGNAL VERNIER
(1926-$6)



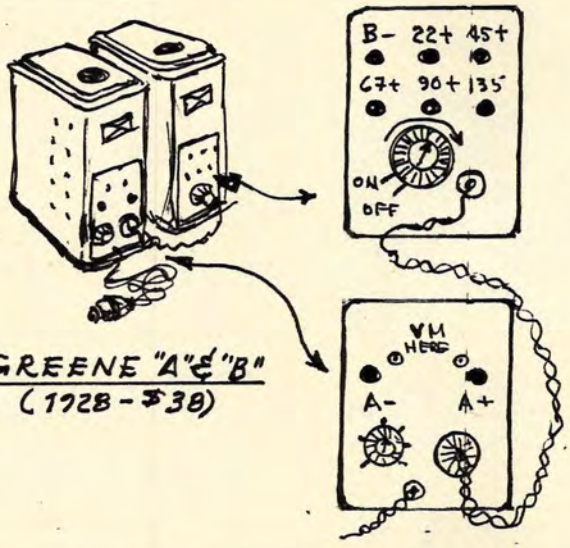
"Bruno"
(1926-$3.50)

EARLY BATTERY ELIMINATORS

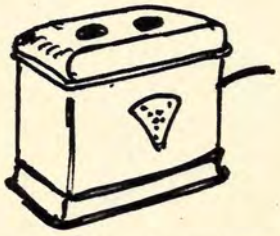
BALKITE "A"
(1926 - $28)

sketches in this sexion represent approximately 20% of the Eliminators available during the Twenties. Information on other eliminators available on request.

STORAD
Type 201AX
w/ Trickler Charger
(1926 - $18)

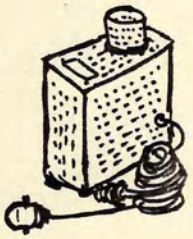


GREENE "A" & "B"
(1928 - $38)

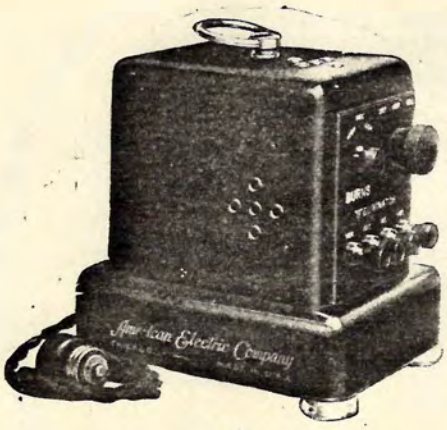


HAROLD POWERS
AC/DC Input
Terminals on
bottom panel.
(1927 - $40)

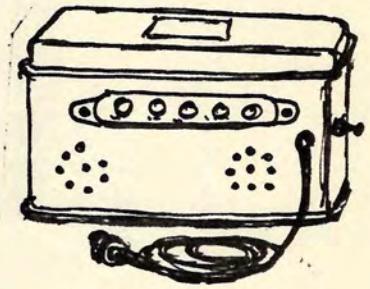
EARLY BATTERY ELIMINATORS



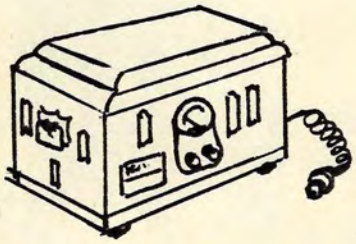
AMRAD
V.R.
876 Ballast
(1927-$15)



BURNS
(1927-$48)

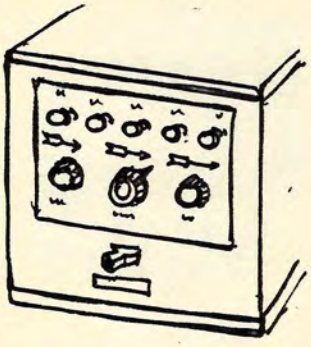


GENERAL RADIO
Type 405, B-H
(1927-$45)

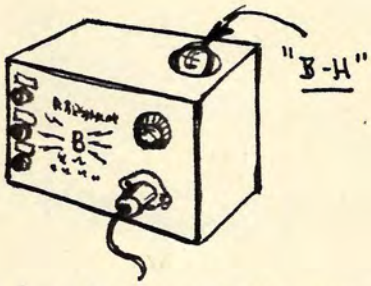


EXIDE Model 7-AB
w/ Relay Switch
(1928-$63)

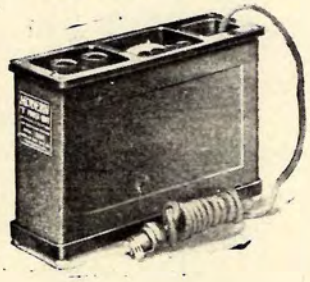
ACME
"Radiopower"
Type AB-180
(1927-$109)



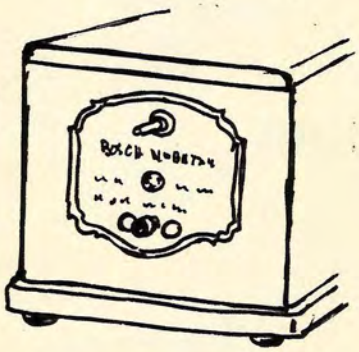
KELLOGG
(1927-$40)



FRESHMAN MASTER
B-ELIMINATOR
(1926-$20)

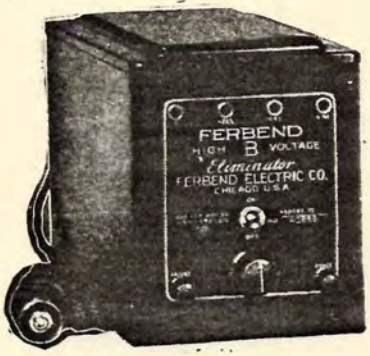


MODERN
(1926-$14)



BOSCH "Nobattery"
(1927-$48)

TYPICAL "B"-ELIMINATOR CONFIGURATIONS



FERBEND
(1926 - $13)

"B" ELIMINATOR

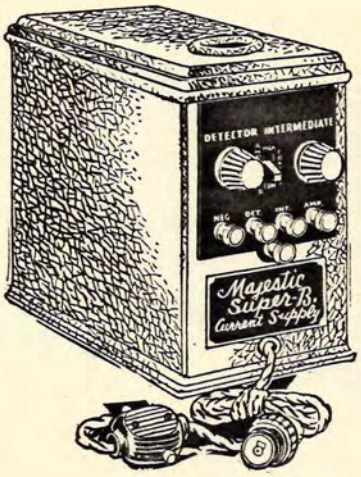
AMRAD
1926 - $35
("S-1" Tube)

MAYOLIAN "B" (1926)

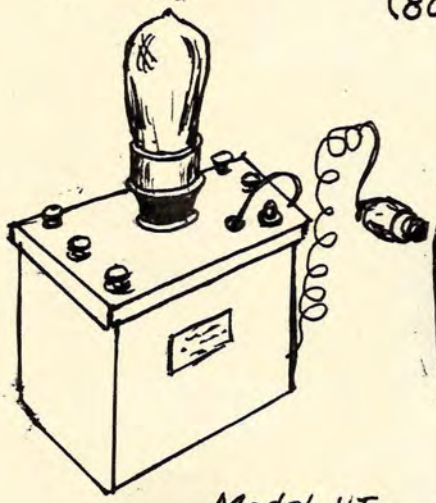
AMERTRAN A·B·C
500 VDC - 110 mA
(1929 - $130)

WEBSTER "B"
(1927 - $38)

CLOVERLEAF
1927 - $16
(80mA - 180VDC)



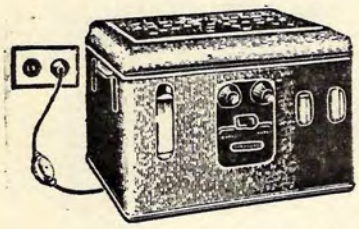
MAJESTIC Super-B



Model HT
MARCONIPHONE
B-Eliminator
(1927)

"SILVER BEAUTY"
"B-C" Unit
(1927 - $45)

TYPICAL "B"-ELIMINATOR CONFIGURATIONS



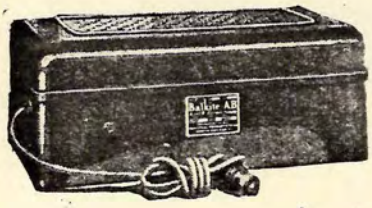
WILLARD "A"-"B"
(1927 - $ 77.50)

MUTER "B" UNIT
(1926 - $ 17)

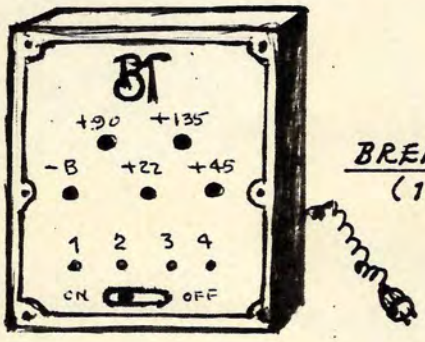
KARAS
A-C-FORMER
(1928 - $ 14)

ABOX "A" CONVERTER
(4V & 6V - 1926 - $ 35)

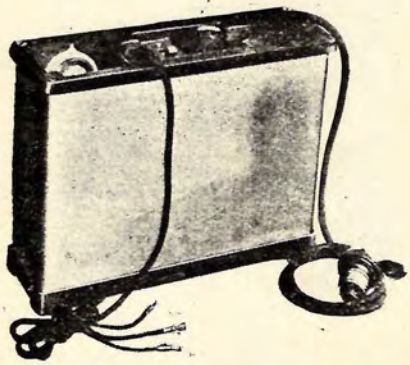
SENTINAL A-B-C
(1927 - $ 18)



BALKITE "A-B"
(1927 - $ 68)

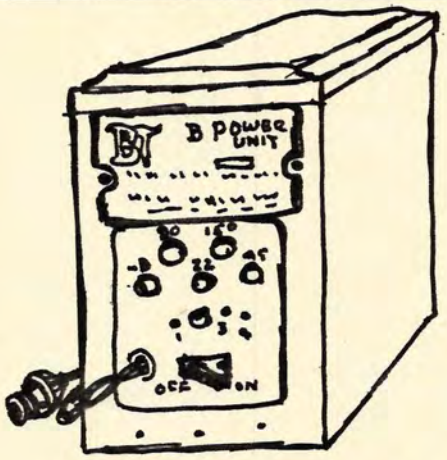


BREMER-TULLY
(1926 - $ 7.50)



ACME B-1
(1926 - $ 12)

"B" - ELIMINATOR CONFIGURATIONS



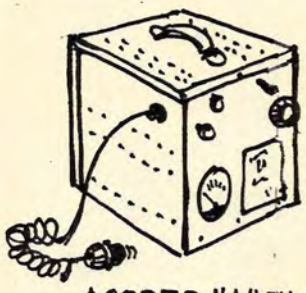
BREMER-TULLY, 1927
(150V @ 60mA; 50)

WARREN
(1927-$25)

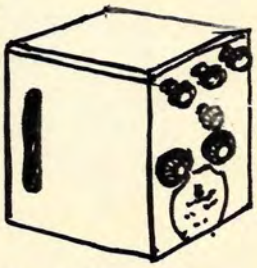
U. S. Patent, Oct. 12, 1926

BALKITE
(1928)

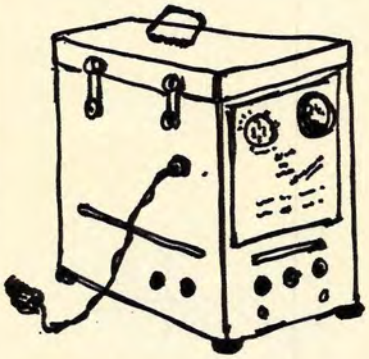
"POWERIZER" PWR. & AMP.
(Radio Receptor Co.; $50, '27)
(10 & 16 Tubes)



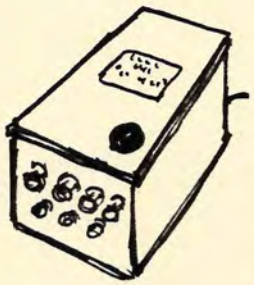
COOPER "A" ELIM.
(1926, 2.5A, 88)



"EDDYSON B"
LaSalle Merchandising
(1927, 10)

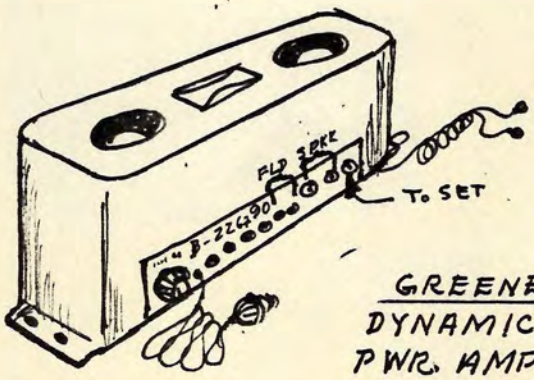


KODEL Model 10 TRANSIFIER
22.5/150V & 4/10V "C"
(1927, 43)

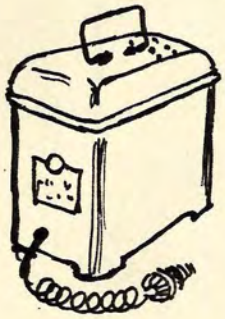


SILVER
B-C
180V @ 40mA
('27-45)

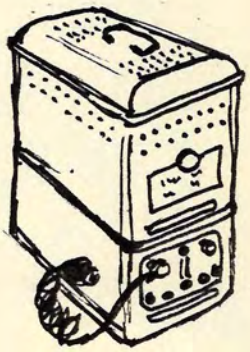
EARLY BATTERY ELIMINATORS



GREENE
DYNAMIC
PWR. AMP.
(1928-$38)



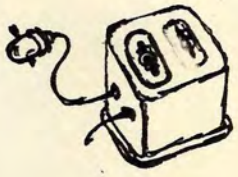
B-135



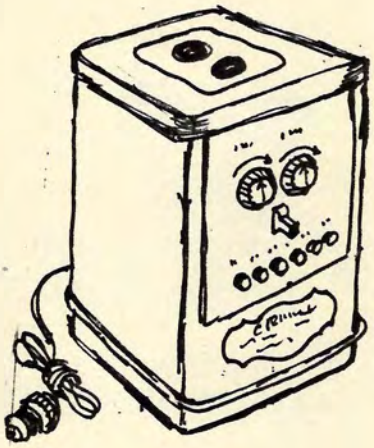
A-6

BALKITE (FANSTEEL)
(1928)

DONGAN 2568 A·B·C
(1926-$18)



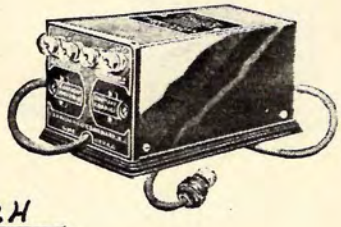
ABOX
PWR. SW.
"A" & "B"
(1927-$10)



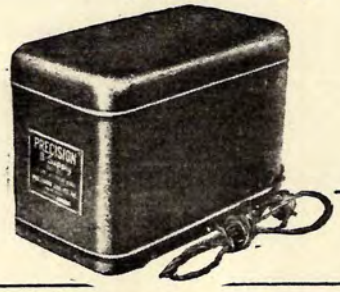
CORNELL Type C-B
227V @ 30mA
155V @ 60mA
(1926-$50)

WEBSTER SuperB
(1926-$50)

THORDARSON
AC FIL Supply
(1927-$10)



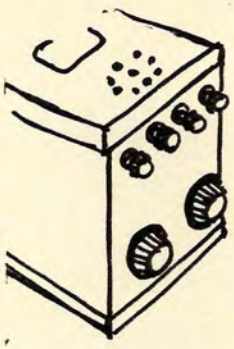
BRACH
(1926-$6)



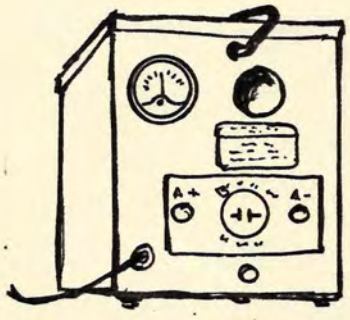
PRECISON
(1927-$20)

EARLY BATTERY ELIMINATORS

RT-41
130V - 20mA
($28)

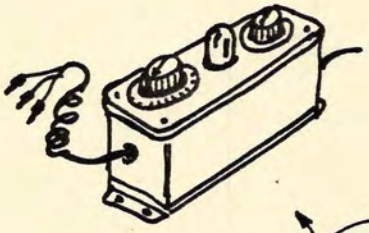


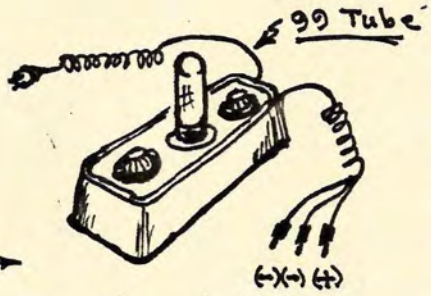
R-97 "B-C"
180V ~ 50mA
($55)



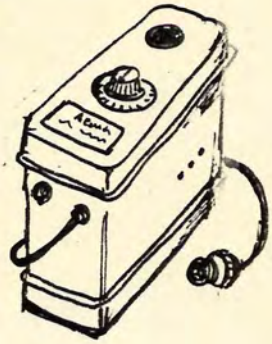
"A" PWR. UNIT
($47)

1927 STERLING BATTERY ELIMINATORS





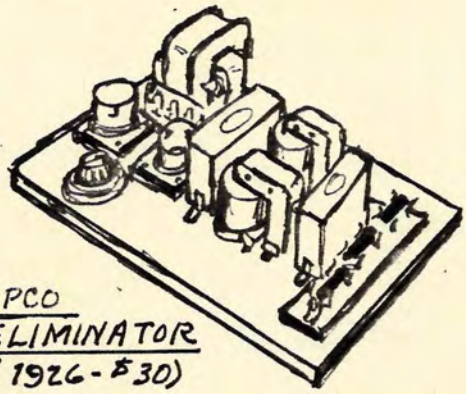
C-Battery Eliminators



E-4

ACME ELIMINATORS - 1928

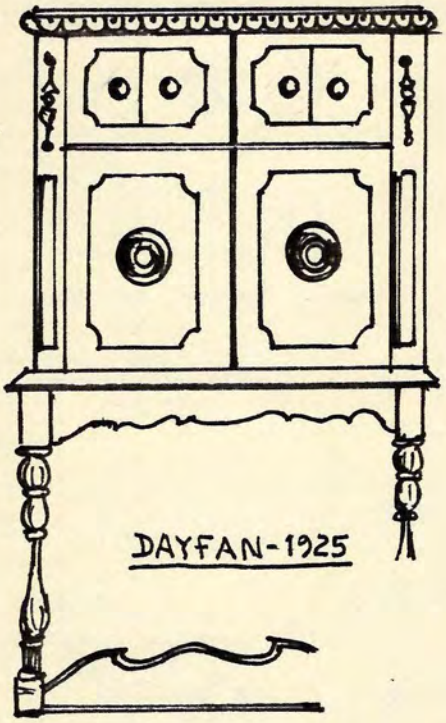
"GOLDEN LEUTZ"
CURRENT SUPPLY
(1927 - $135)



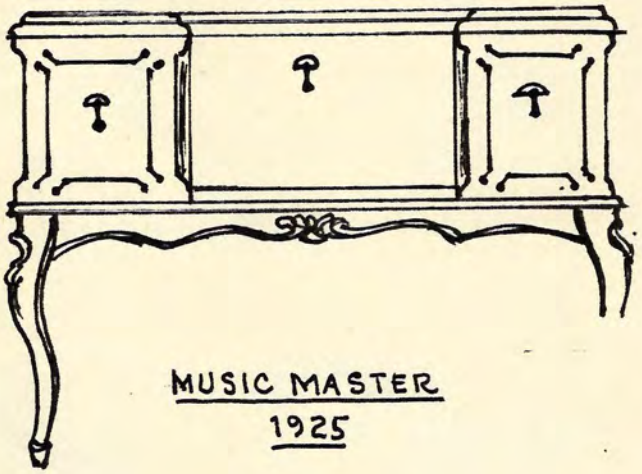
APCO
B-ELIMINATOR
(1926 - $30)

RADIO CONSOLE CONFIGURATIONS

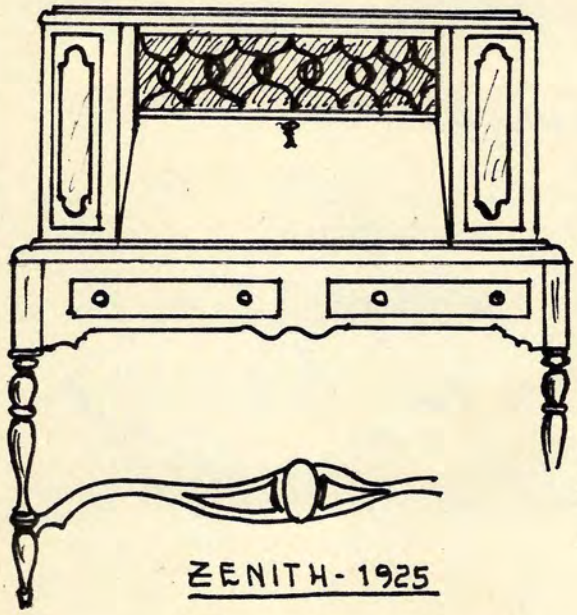
The most popular wood used in radio cabinets was undoubtedly walnut, but among the other woods used were mahogany, rosewood, burl, American walnut, teak, gumwood, split walnut; the better ones being hand-rubbed to a piano-finish that endured.



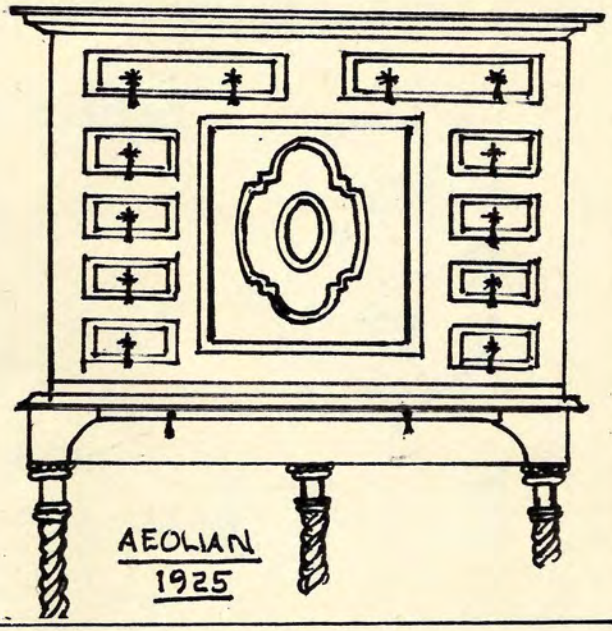
DAYFAN-1925



MUSIC MASTER
1925

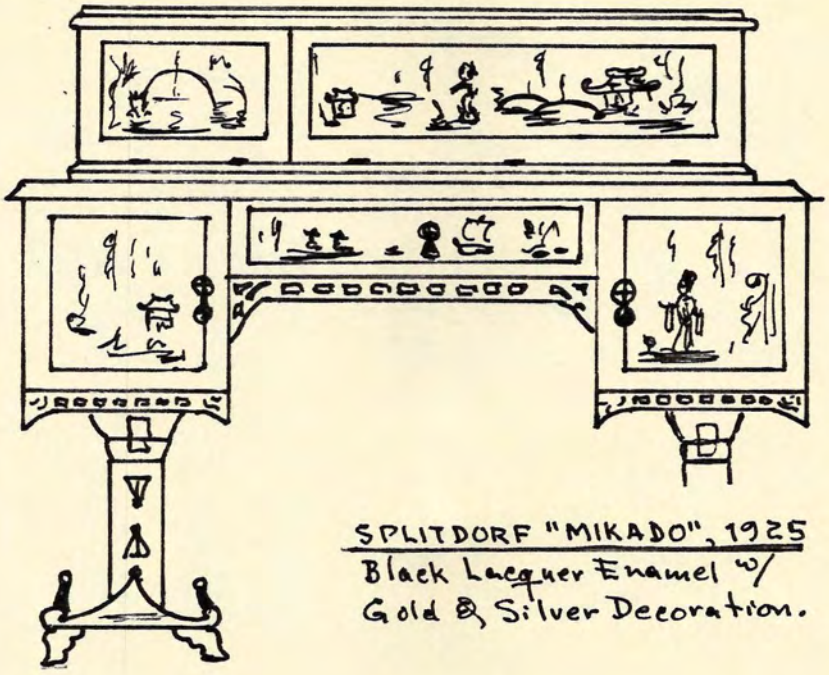


ZENITH-1925

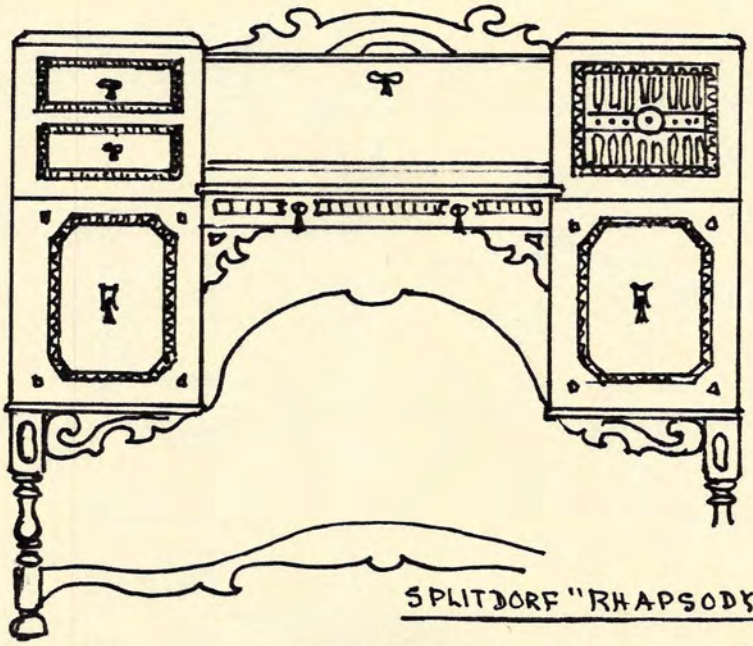


AEOLIAN
1925

RADIO CONSOLE CONFIGURATIONS

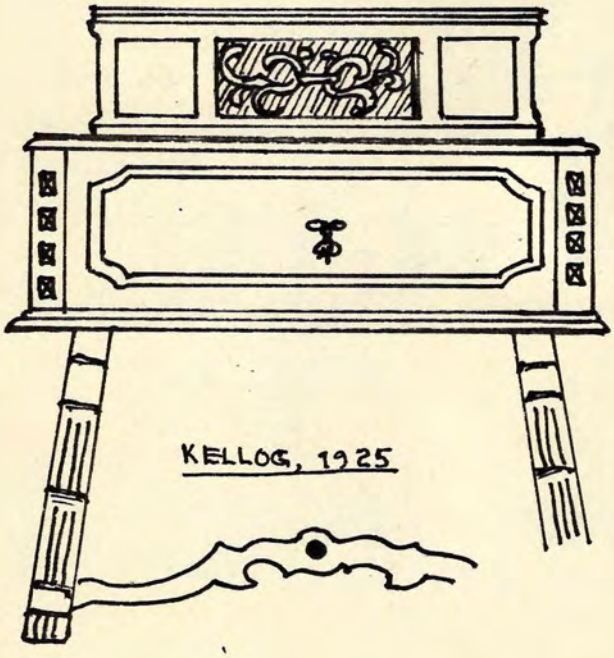


SPLITDORF "MIKADO", 1925
Black Lacquer Enamel w/
Gold & Silver Decoration.

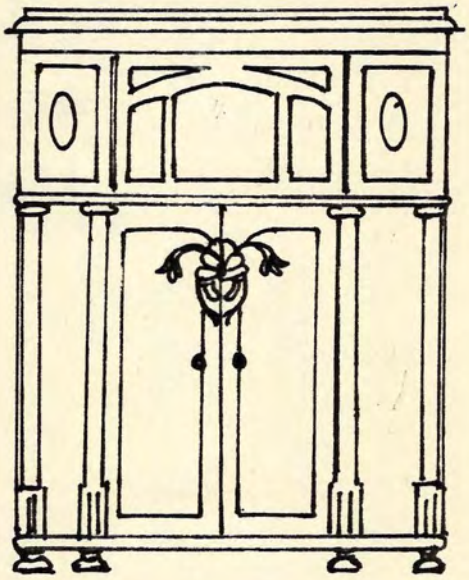


SPLITDORF "RHAPSODY", 1925

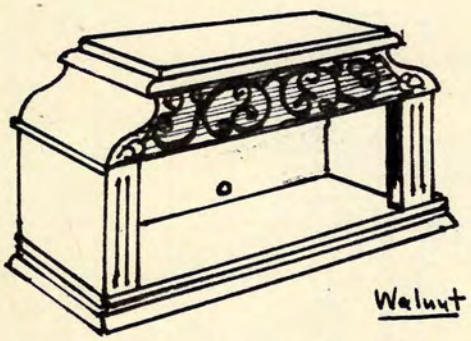
RADIO CONSOLE CONFIGURATIONS



KELLOG, 1925

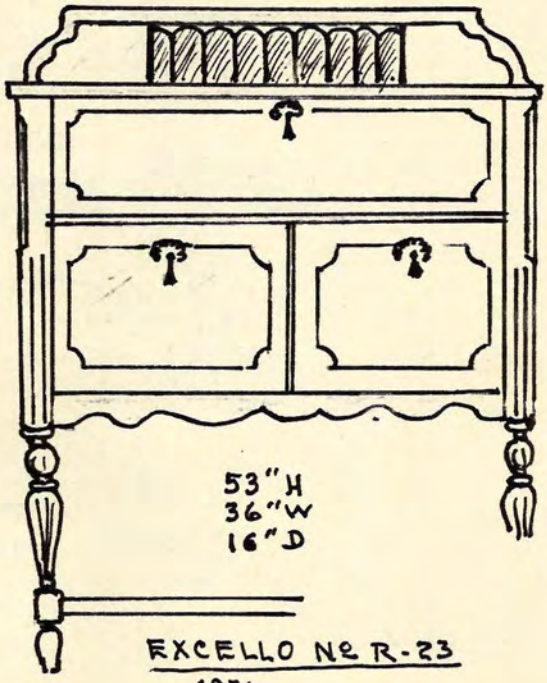


HOWARD - 1926



Walnut

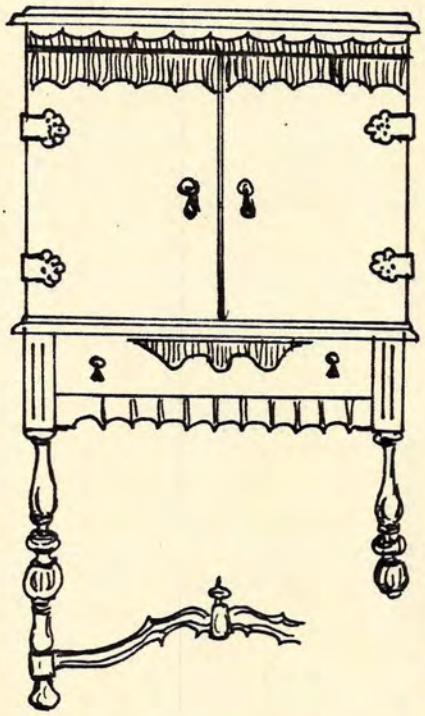
BELLE PLAINE CABINET
(Used By SLEEPER)
28"L, 16"H, 17"D.
(1927 - $15)



53"H
36"W
16"D

EXCELLO Nº R-23
1926

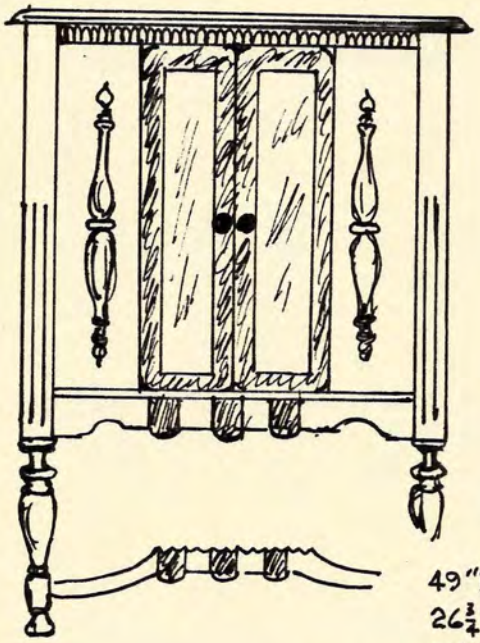
RADIO CONSOLE CONFIGURATIONS



52"H
27"W
17½"D

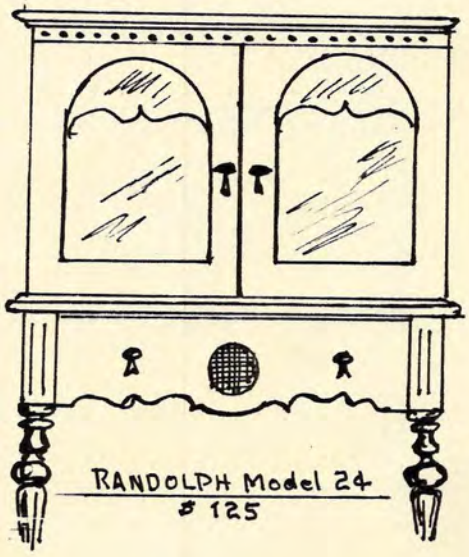
RAMCO Model 77K, $110
(A 1640 Design Reproduction)
American Walnut & Gumwood w/ Overlays of Burl; Silk-Lined Grille.

(1929)



49"H
26¾"W
19½"D

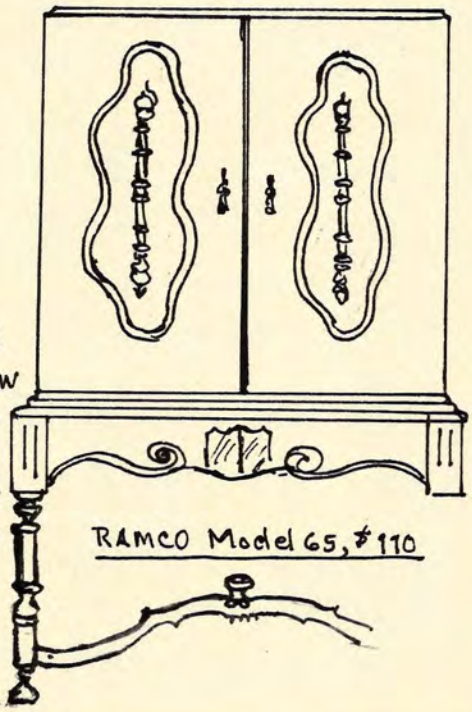
RAMCO Model 24, $90
American Walnut, Burl & Striped Walnut; Silk-Lined Grille.



52½"H
28"W
15"D

SOLID WALNUT w/OVER-LAYS

RANDOLPH Model 24
$125

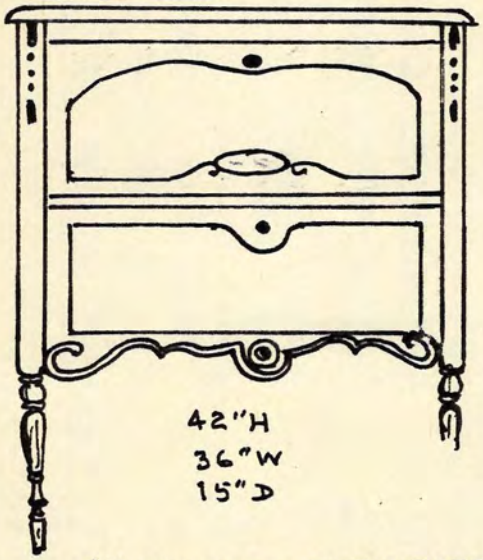


40"H
25¾"W
12¾"D

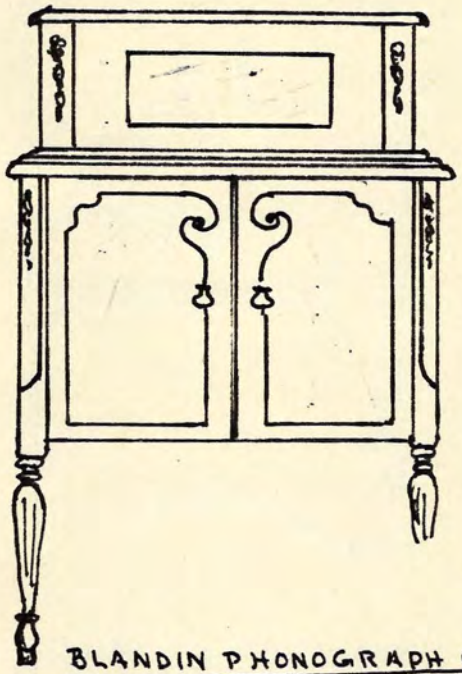
WALNUT w/OVER-LAYS

RAMCO Model 65, $110

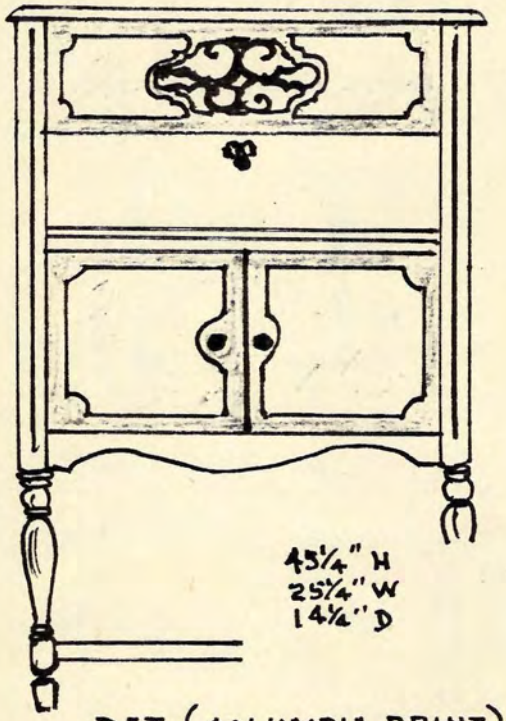
RADIO CONSOLE CONFIGURATIONS



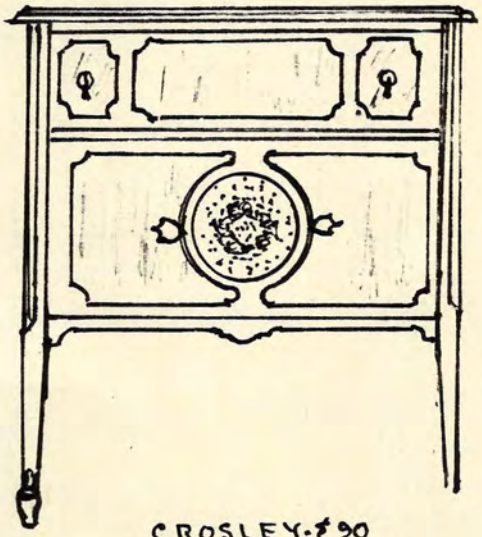
CHARLOTTE FURNITURE
(1926 - 39) No 3



BLANDIN PHONOGRAPH CO.
"Versailles" Model - 1926

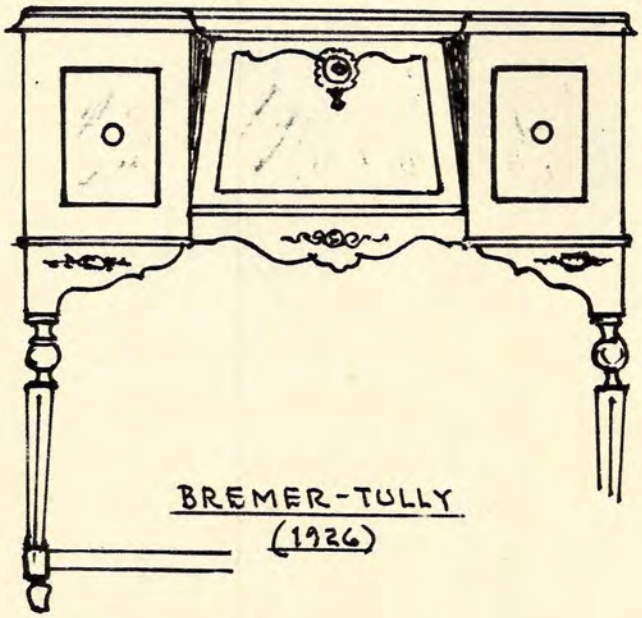


BST (COLUMBIA PRINT)
(1925)

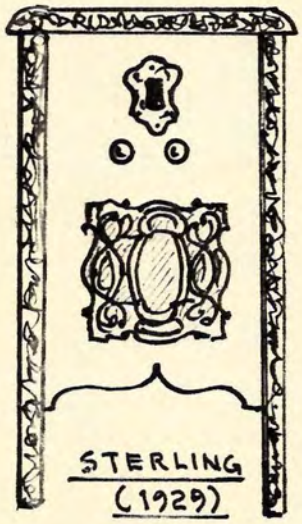


CROSLEY - $90
(1926)
AMRAD - $192 (Variant)

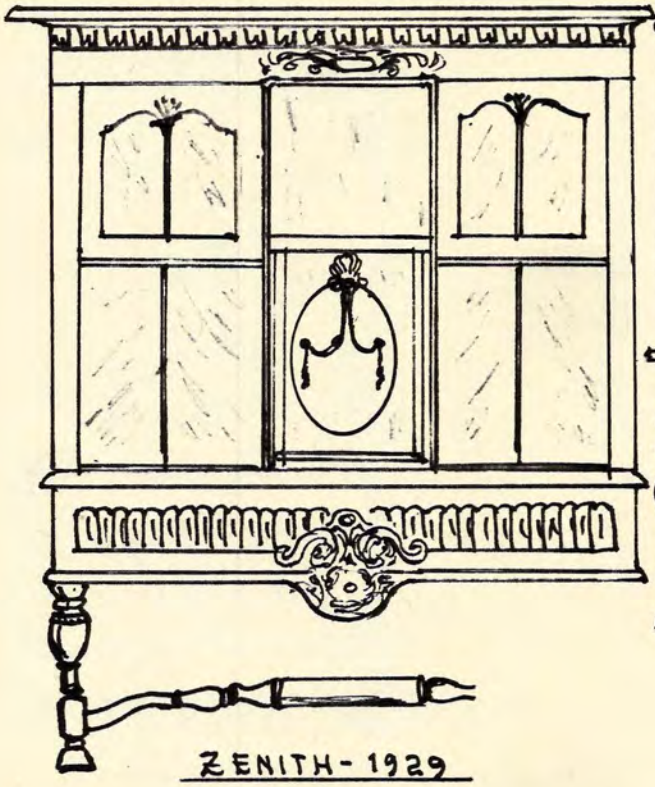
RADIO CONSOLE CONFIGURATIONS



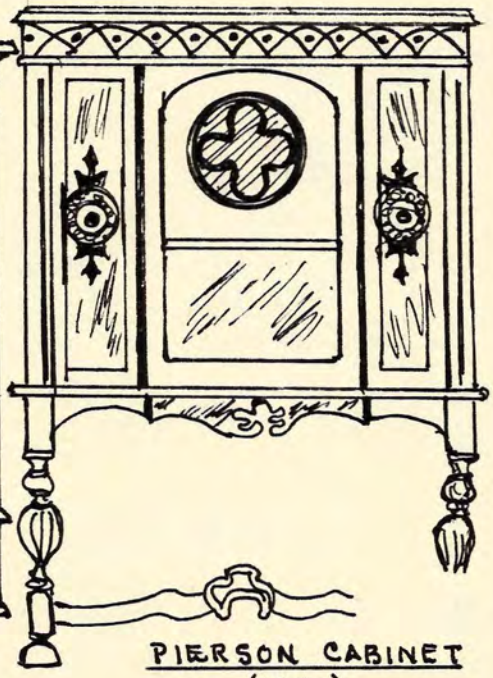
BREMER-TULLY
(1926)



STERLING
(1929)

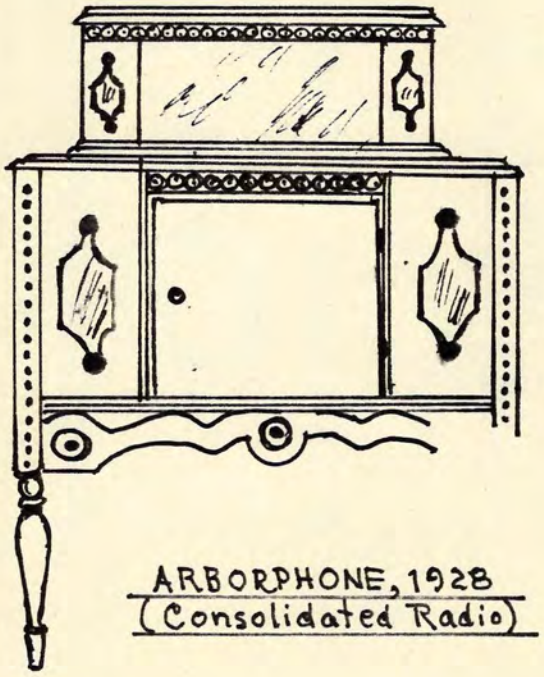


ZENITH-1929

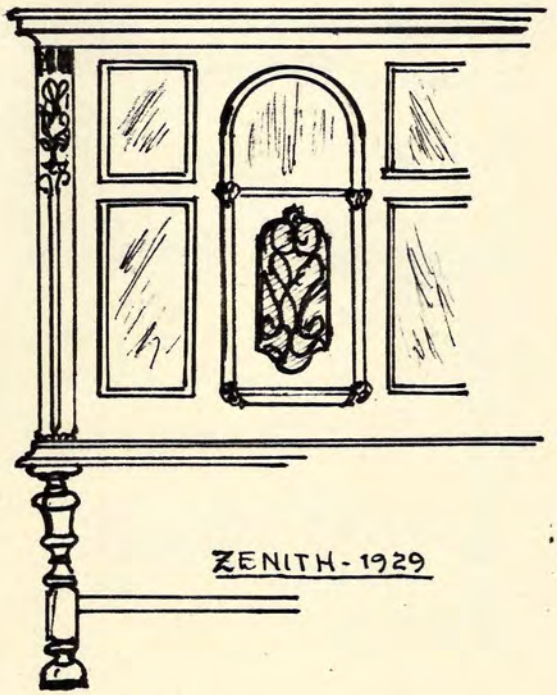


PIERSON CABINET
(1929)

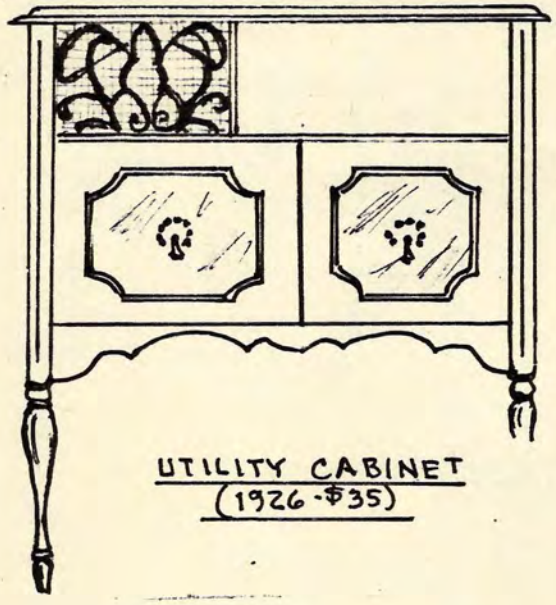
RADIO COLSOLE CONFIGURATIONS



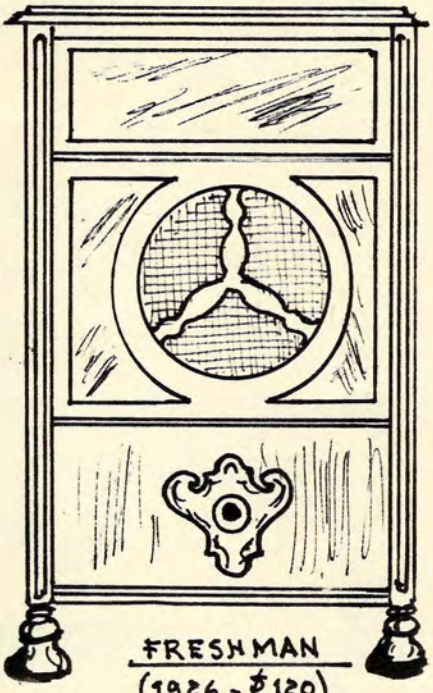
ARBORPHONE, 1928
(Consolidated Radio)



ZENITH - 1929

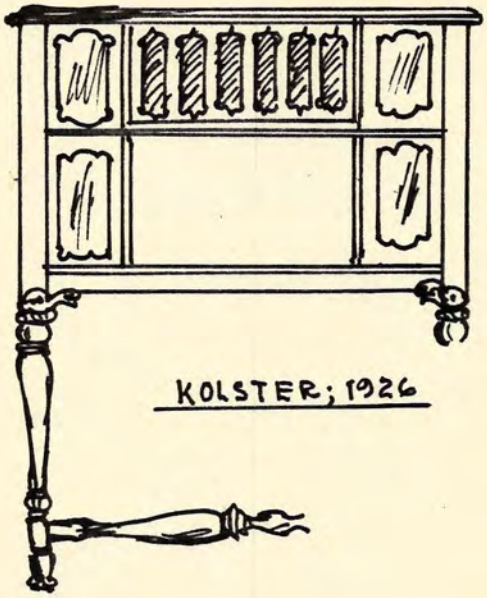


UTILITY CABINET
(1926 - $35)

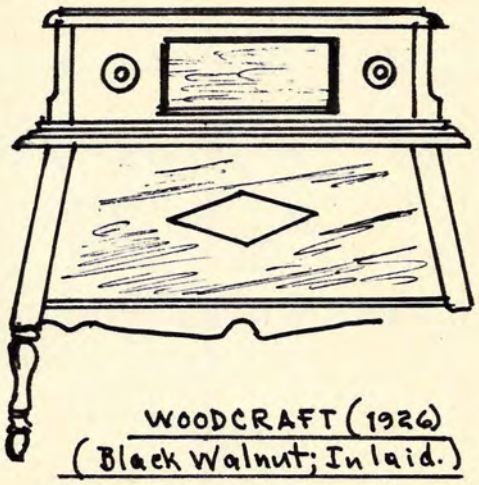


FRESHMAN
(1926 - $120)

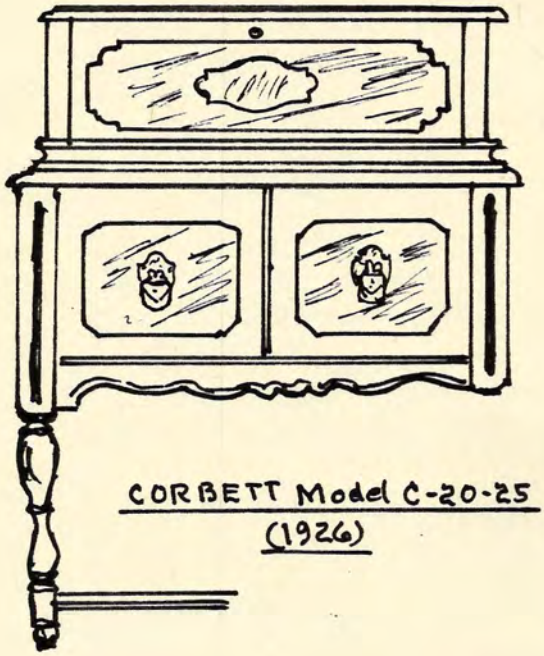
RADIO CONSOLE CONFIGURATIONS



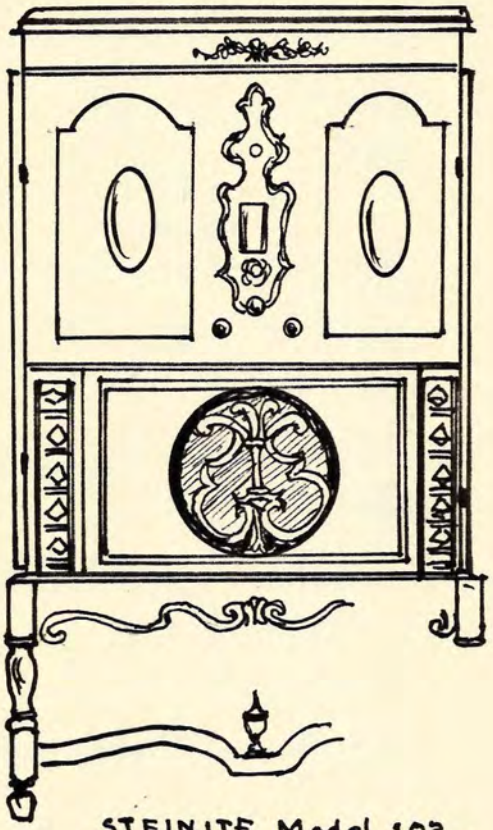
KOLSTER; 1926



WOODCRAFT (1926)
(Black Walnut; Inlaid.)



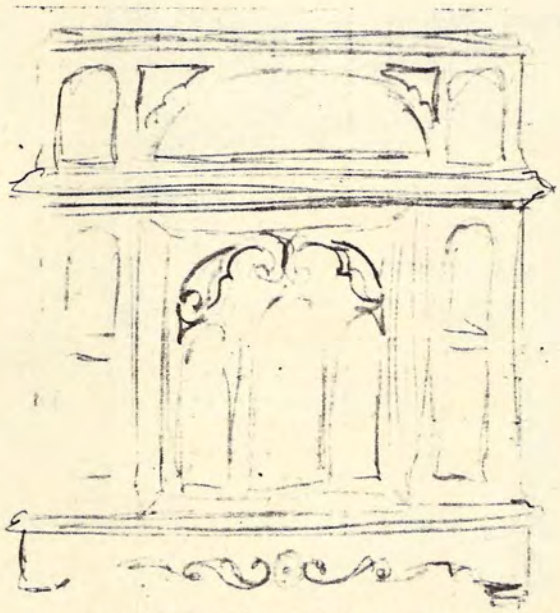
CORBETT Model C-20-25
(1926)



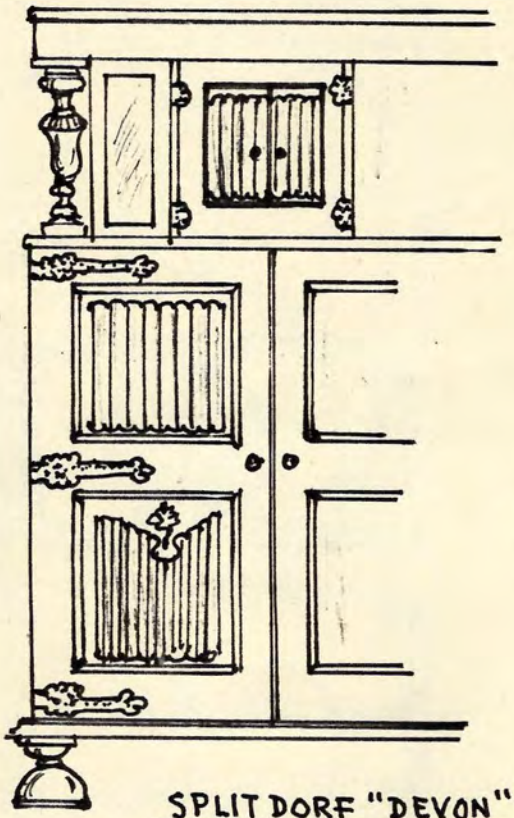
STEINITE Model 102
(1929)

CONSOLE RADIO CONFIGURATIONS

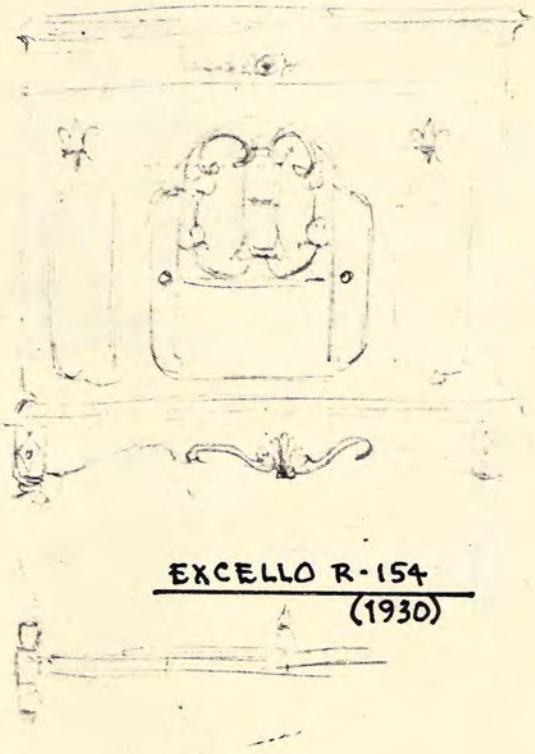
FARRAND (1928)



BROWNING-DRAKE 32
(1928)

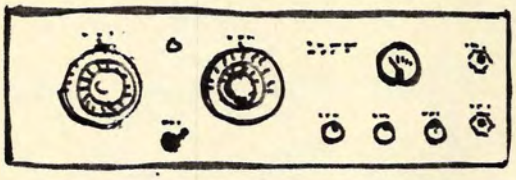


SPLITDORF "DEVON"
(1928)

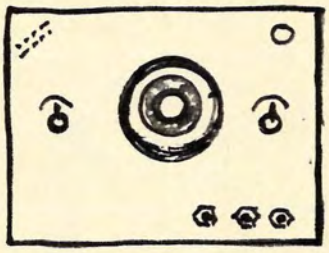


EXCELLO R-154
(1930)

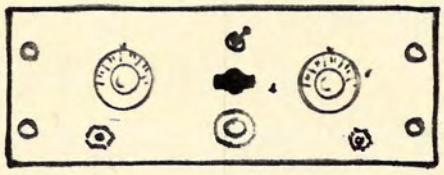
1924 PANEL CONFIGURATIONS:



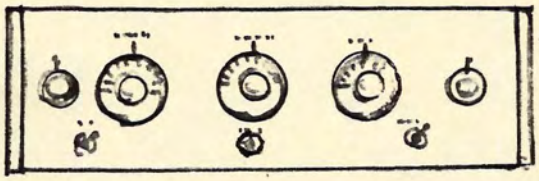
MU-RAD MODEL MA-15 SIX ($180)



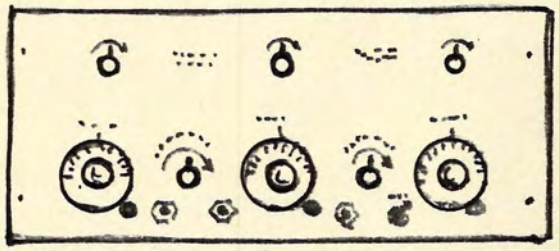
BRANDOLA SIX ($125)



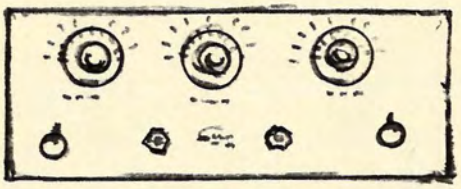
BENSON MODEL 3X-SUPERFLEX ($85)



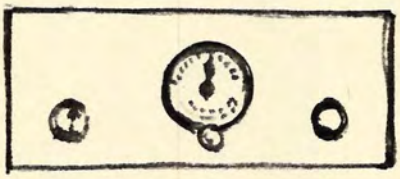
FREED-EISEMANN NR-7



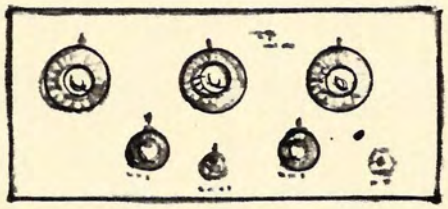
COTA "SYMPHONIC" FOUR



DAY-FAN MODEL OFM-7-4 ($98)

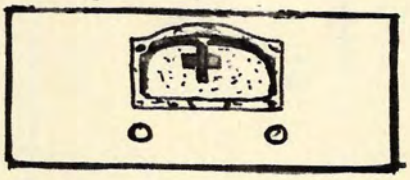


MAGNAVOX TRF-5 ($125)

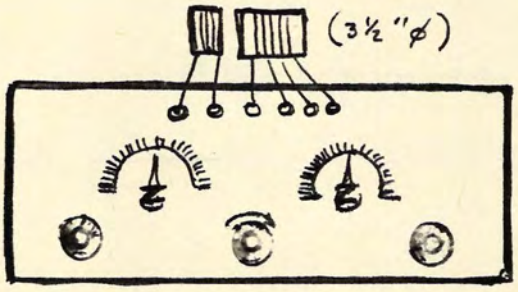


EAGLE MODEL "B" ($170)

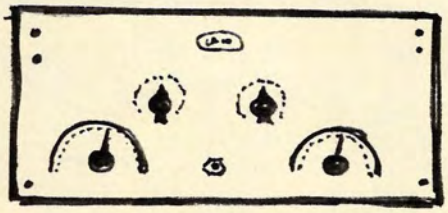
1925 PANEL CONFIGURATIONS



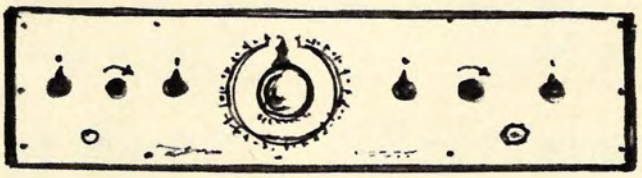
BALKITE AC (FANSTEEL)



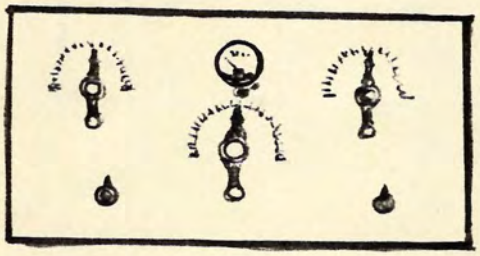
REINARTZ-ZENITH SW. RECEIVER



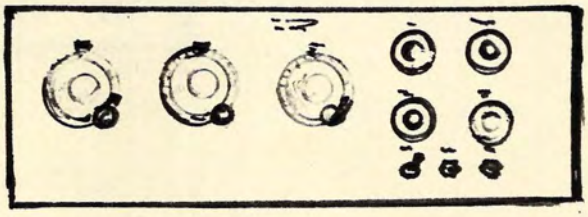
PREISS REFLEX FOUR - $145



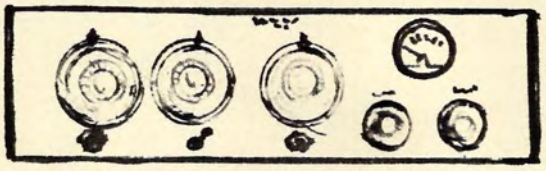
THERMIODYNE TE-6 - $150



HARTMAN TYPE 12-B - $135

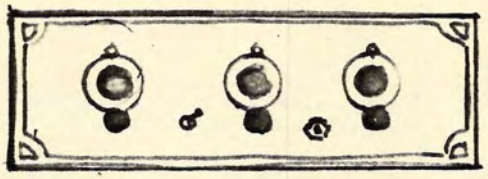


AIR-WAY MODEL 51 - $135

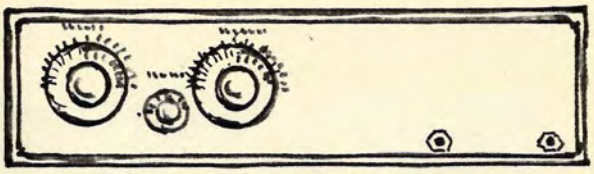


MARVODYNE T.R.F.

1926 PANEL CONFIGURATIONS:

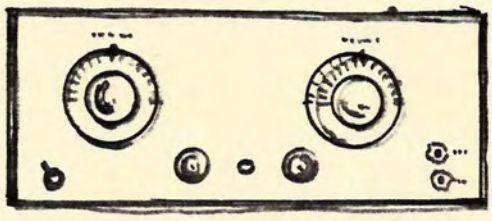


PONTIAC 5-TUBE TRF

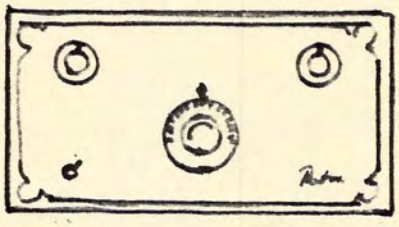


SCOTT WORLD RECORD 9

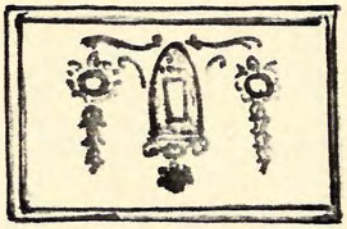
WALBERT RF
BOOSTER -
"PENETROLA"



SILVER SUPERHET SIX

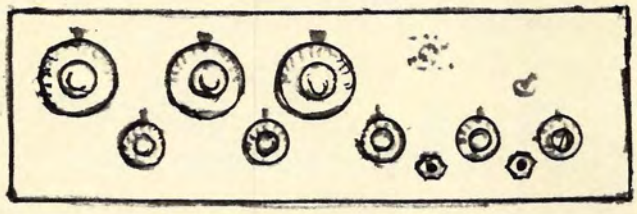


PONTIAC CONSOLE

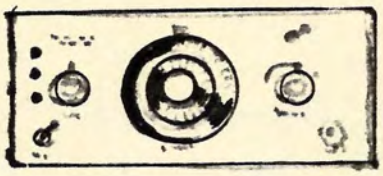


MILLER-WELLS "MINERVA"
AC-8 ($198)

1924 PANEL CONFIGURATIONS:



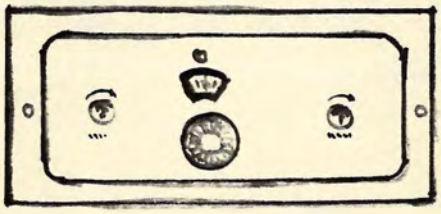
HOWARD FOUR/FIVE



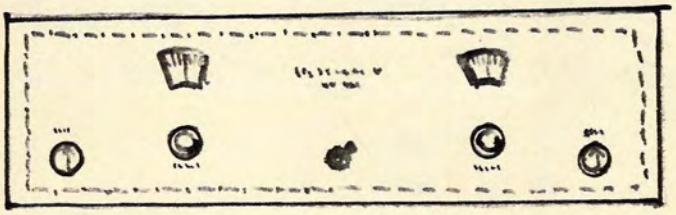
ACME 4-TUBE REFLEX

1927 PANEL CONFIGURATIONS

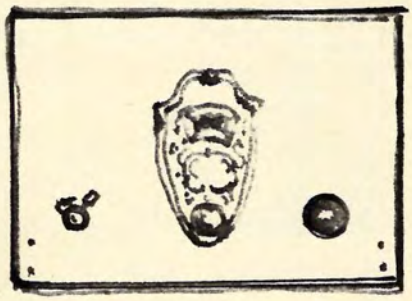
MELO-HEALD SUPER 11



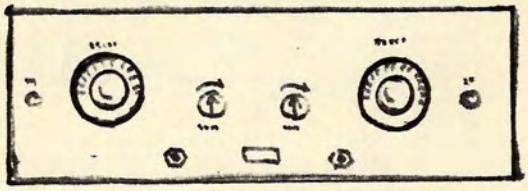
"ROYAL BLUE RIBBON" EIGHT - ($250)



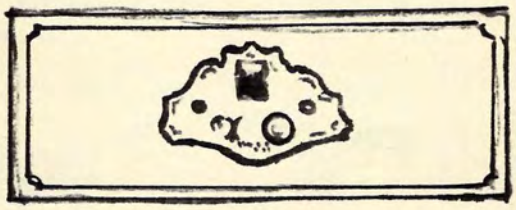
MADISON-MOORE "ONE-SPOT"



BRAXTON-KING



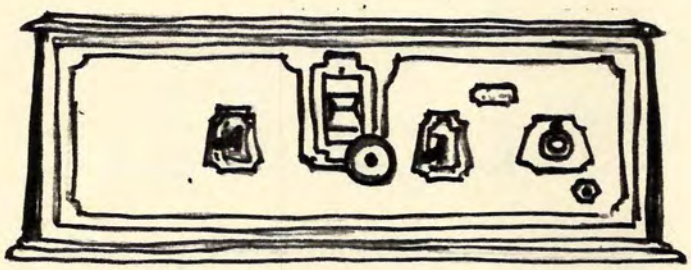
BROWNING-DRAKE



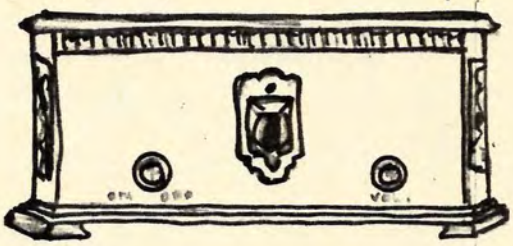
PACKARD AC EIGHT ($250)

SCOTT WORLD RECORD NINE

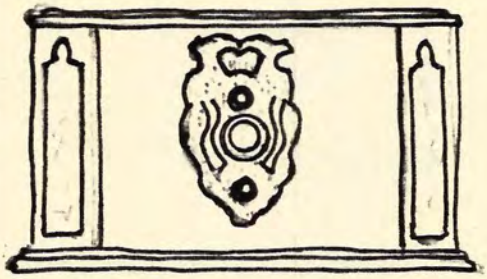
1928 PANEL CONFIGURATIONS



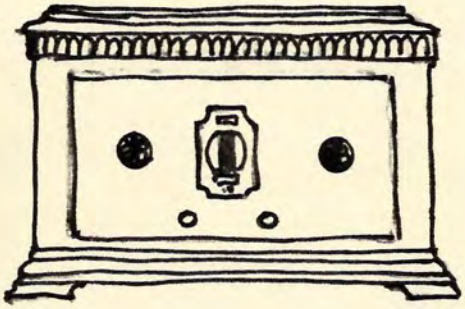
METRODYNE SEVEN AC/BATT. - $75



HAMMARLUND "Hi-Q" - $98

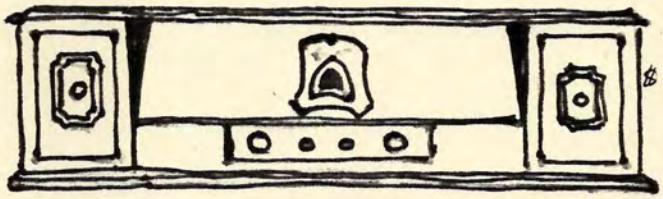


NAVAJO SIX AC/BATT - $68

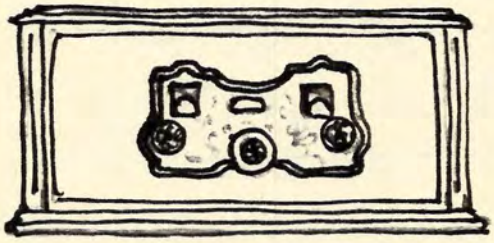


MU-RAD SIX AC - $98

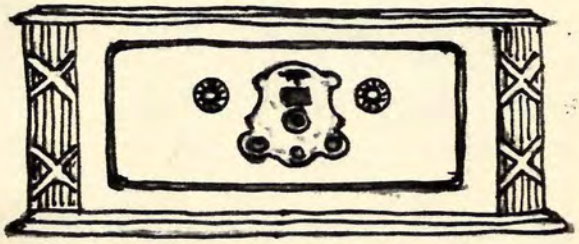
KING COMMANDER SIX - $220



ZENITH MODEL 17-E - $350

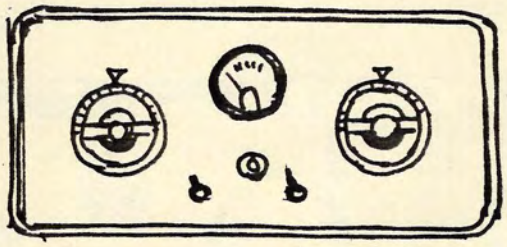


FADA "SPECIAL FIVE" - $35

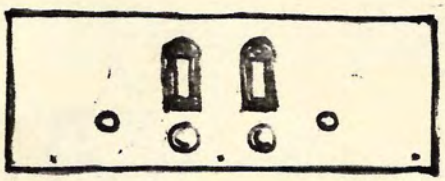


CLEARTONE " MAYFLOWER" - $250

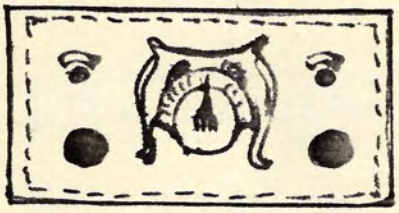
PANEL CONFIGURATIONS



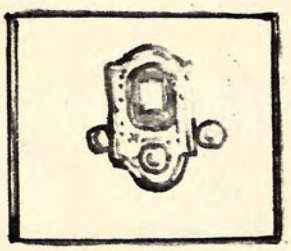
JEWETT TRF, 1925



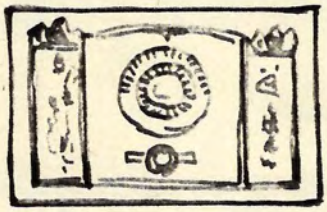
HOLLISTER AC-8



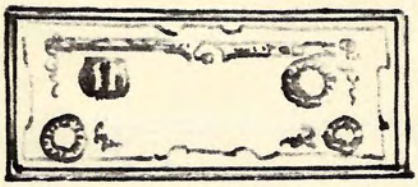
MUSIC-MASTER MODEL 140



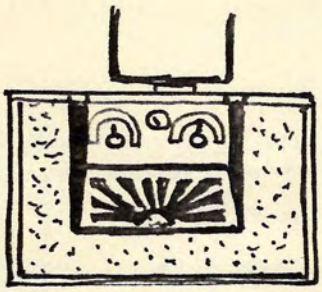
ROBERTSON-DAVIS R-D 22
AC Super Six



FISHER FIVE (Metal)
1926 - $25



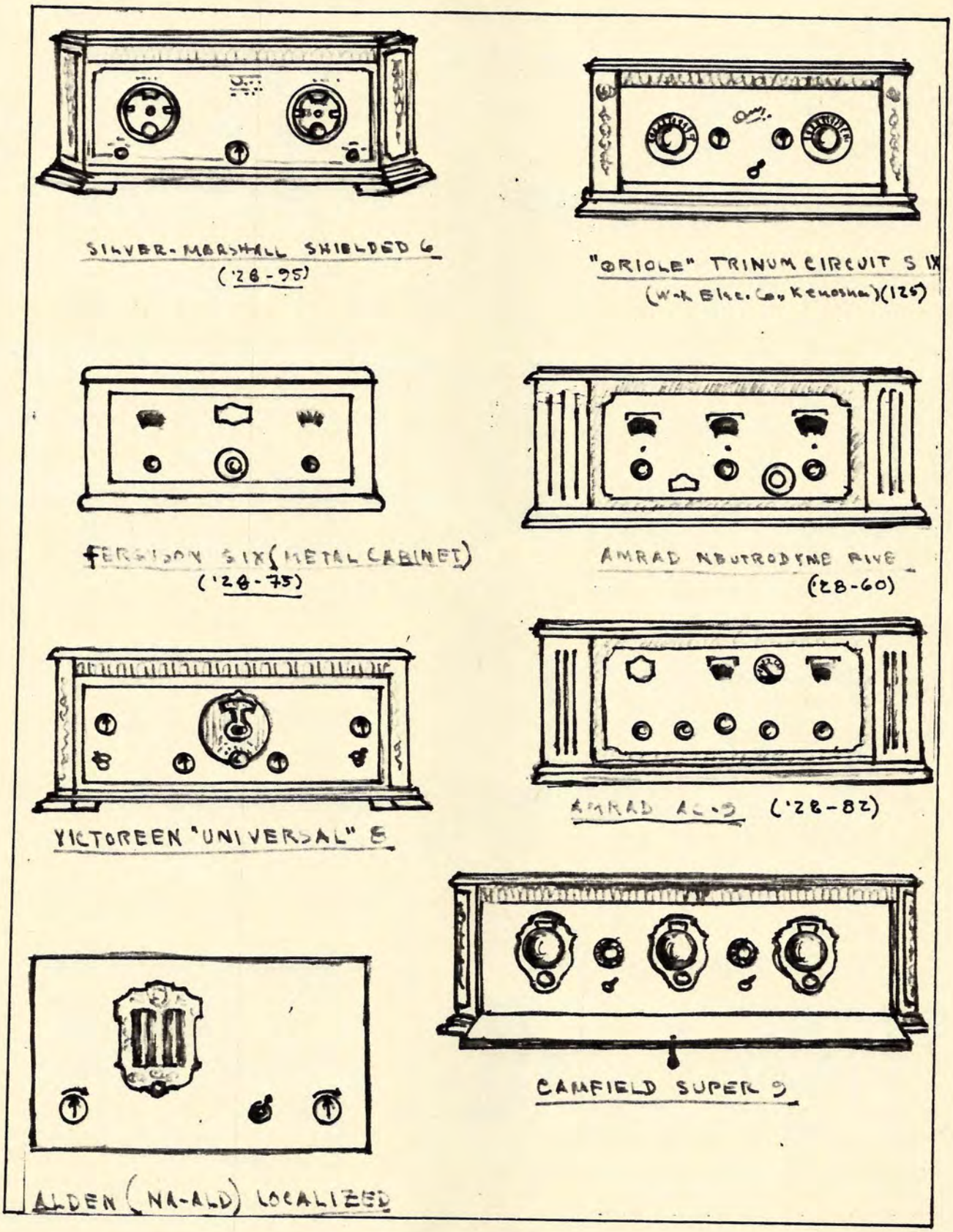
WESTGATE FIVE, 1925;$47



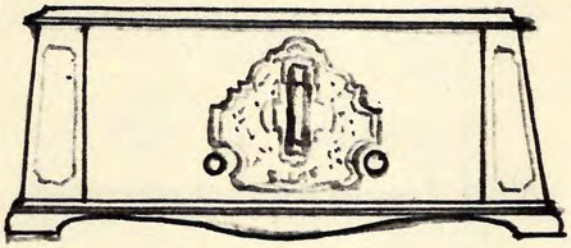
OPERADIO PORTABLE
1925 - $189

NORDEN-HAUCK "ADMIRALITY 10", 1927

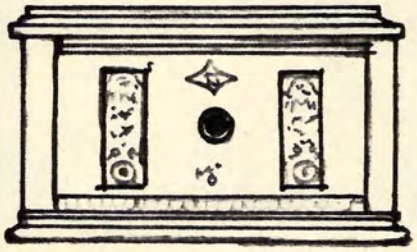
PANEL CONFIGURATIONS



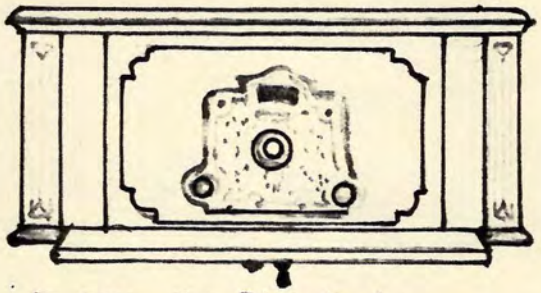
PANEL CONFIGURATIONS



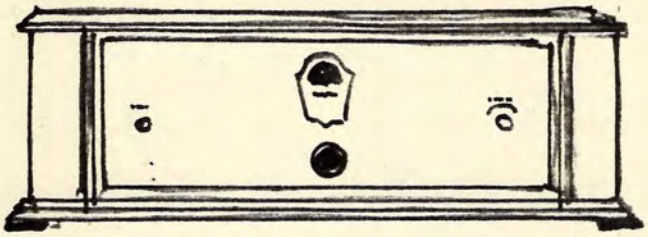
ELKAY "SENIOR" AC
('28-195)



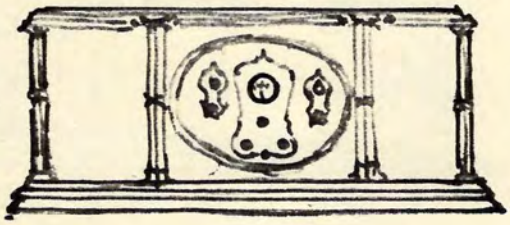
BUCKINGHAM SIX
(AC-BATT.)



FREED-EISEMANN AC
('28-295)

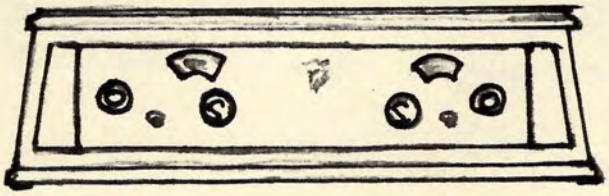


SPARTON Model 62 AC
('28-188)

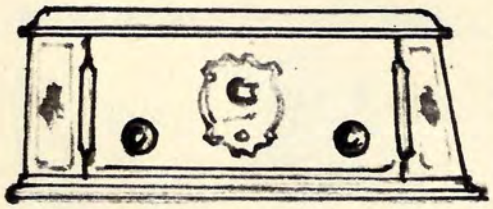


ARGUS SIX AC, 210 AF
('28-195)

APEX "MINSTREL" SERIES
('28-225)

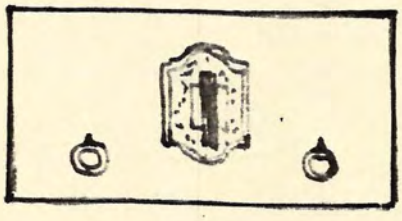


VALLEYTONE Model SL FIVE
('28-85)

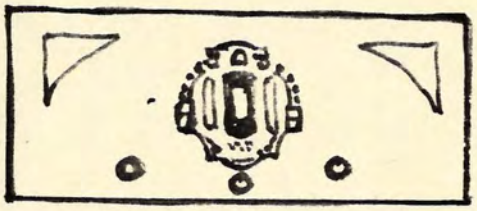


FRANSTIEHL Model [illegible] SIX
('28-185)

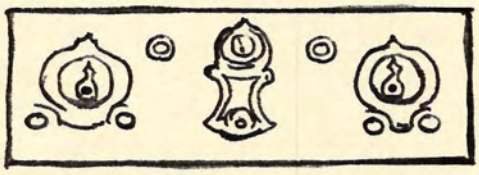
PANEL CONFIGURATIONS



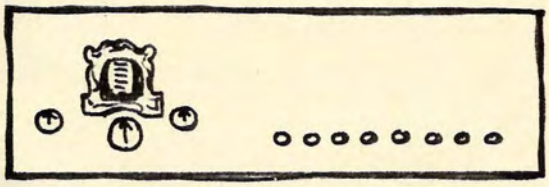
ARBORPHONE "ARISTISONNE"
1927 - $75



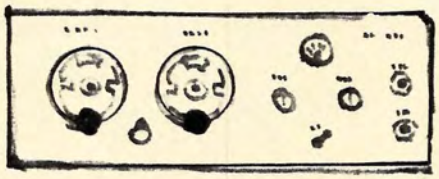
BROWNING-DRAKE EIGHT



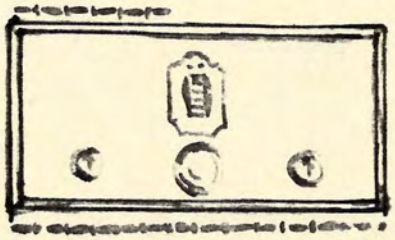
STROMBERG-CARLSON 601A & B
1927 - $195



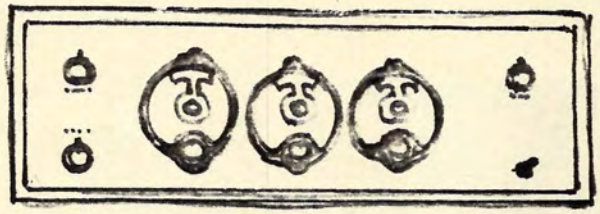
ROBERTSON-DAVIS AUTOMATIC SIX'28



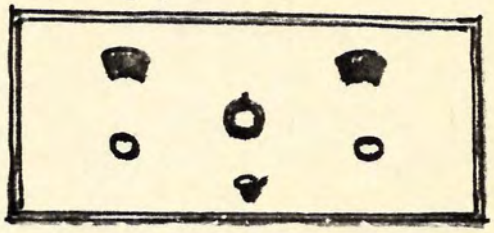
St. JAMES "240" SUPER



SIGNAL "SIGNOLA" SIX



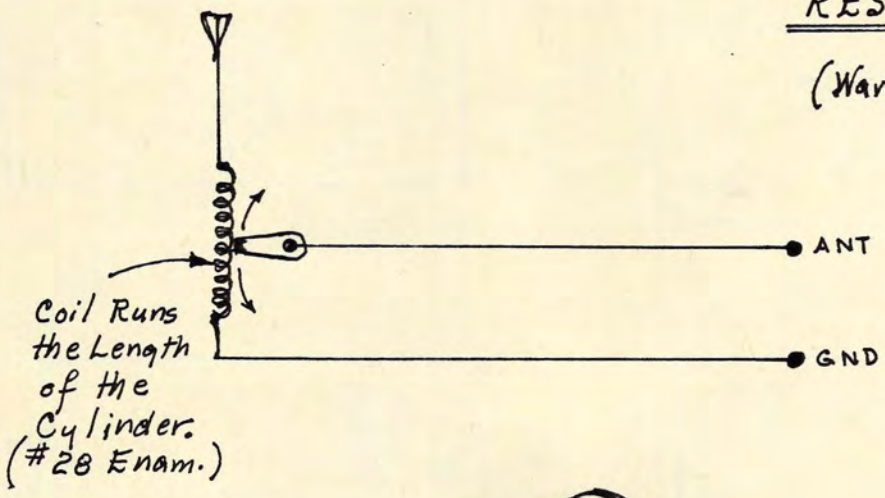
POWERS - CASEM FIVE

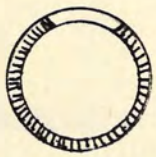


LOFTIN-WHITE FIVE

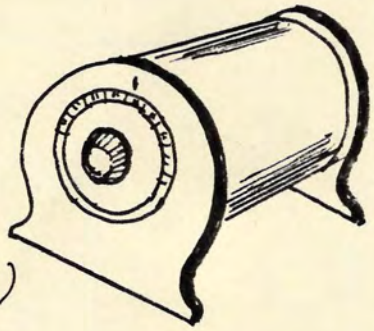
"RESONATOR"

(Wave-Trap)



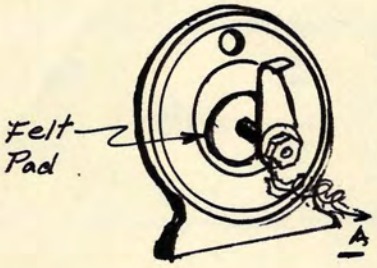


Front View
(Cover Removed)

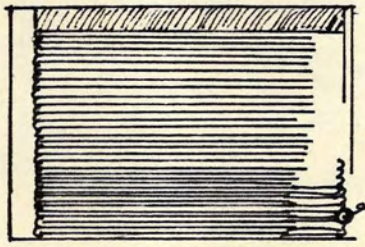


Rear View

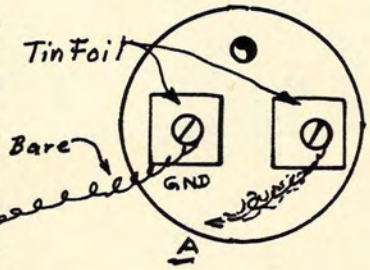
F & H Radio Laboratories
Fargo • (1924) • North Dakota



A = DSC #18 Flexible



#28 Enamelled Winding



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